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APPENDICES / ATTACHMENTS

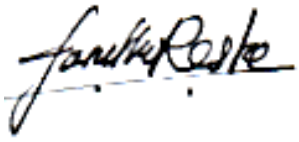
Appendix 1 Management of Breech Presentation algorithm
Appendix 2 Breech Clinic Proforma 2019
Appendix 3 Unplanned breech in labour proforma
Appendix 4 Physiological breech birth Algorithm

EQUALITY STATEMENT

The Trust has legal responsibilities in terms of equality (Section 75 of the Northern Ireland Act 1998), disability discrimination and human rights to undertake a screening exercise to ascertain if this policy/proposal has potential impact and if it should be subject to a full impact assessment. This process is the responsibility of the policy or service lead - the template and guidance are available on the Belfast Trust Intranet. Colleagues in Equality and Planning can provide assistance or support.
This policy has been screened regionally.

SIGNATORIES

(Policy – Guidance should be signed off by the author of the policy and the identified responsible director).



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Management of Breech Presentation

Green-top Guideline No. 20b

March 2017

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Management of Breech Presentation

This is the fourth edition of this guideline originally published in 1999 and revised in 2001 and 2006 under the same title.

Executive summary of recommendations

What information should be given to women with breech presentation at term?

Women with a breech presentation at term should be offered external cephalic version (ECV) unless there is an absolute contraindication. They should be advised on the risks and benefits of ECV and the implications for mode of delivery. [New 2017] **A**

Women who have a breech presentation at term following an unsuccessful or declined offer of ECV should be counselled on the risks and benefits of planned vaginal breech delivery versus planned caesarean section.

What information about the baby should be given to women with breech presentation at term regarding mode of delivery?

Women should be informed that planned caesarean section leads to a small reduction in perinatal mortality compared with planned vaginal breech delivery. Any decision to perform a caesarean section needs to be balanced against the potential adverse consequences that may result from this. **A**

Women should be informed that the reduced risk is due to three factors: the avoidance of stillbirth after 39 weeks of gestation, the avoidance of intrapartum risks and the risks of vaginal breech birth, and that only the last is unique to a breech baby. [New 2017] **B**

Women should be informed that when planning delivery for a breech baby, the risk of perinatal mortality is approximately 0.5/1000 with caesarean section after 39^{+0} weeks of gestation; and approximately 2.0/1000 with planned vaginal breech birth. This compares to approximately 1.0/1000 with planned cephalic birth. **C**

Selection of appropriate pregnancies and skilled intrapartum care may allow planned vaginal breech birth to be nearly as safe as planned vaginal cephalic birth. [New 2017] **C**

Women should be informed that planned vaginal breech birth increases the risk of low Apgar scores and serious short-term complications, but has not been shown to increase the risk of long-term morbidity. [New 2017]

B

Clinicians should counsel women in an unbiased way that ensures a proper understanding of the absolute as well as relative risks of their different options. [New 2017]

What information should women having breech births be given about their own immediate and future health?

Women should be informed that planned caesarean section for breech presentation at term carries a small increase in immediate complications for the mother compared with planned vaginal birth.

A

Women should be informed that maternal complications are least with successful vaginal birth; planned caesarean section carries a higher risk, but the risk is highest with emergency caesarean section which is needed in approximately 40% of women planning a vaginal breech birth. [New 2017]

B

Women should be informed that caesarean section increases the risk of complications in future pregnancy, including the risks of opting for vaginal birth after caesarean section, the increased risk of complications at repeat caesarean section and the risk of an abnormally invasive placenta. [New 2017]

B

Women should be given an individualised assessment of the long-term risks of caesarean section based on their individual risk profile and reproductive intentions, and counselled accordingly. [New 2017]

What information should women having breech births be given about the health of their future babies?

Women should be informed that caesarean section has been associated with a small increase in the risk of stillbirth for subsequent babies although this may not be causal. [New 2017]

C

What factors affect the safety of vaginal breech delivery?

Antenatal assessment

Following the diagnosis of persistent breech presentation, women should be assessed for risk factors for a poorer outcome in planned vaginal breech birth. If any risk factor is identified, women should be counselled that planned vaginal birth is likely to be associated with increased perinatal risk and that delivery by caesarean section is recommended. [New 2017]

Women should be informed that a higher risk planned vaginal breech birth is expected where there are independent indications for caesarean section and in the following circumstances: C

Hyperextended neck on ultrasound.

High estimated fetal weight (more than 3.8 kg).
Low estimated weight (less than tenth centile).
Footling presentation.

Evidence of antenatal fetal compromise. [New 2017]

The role of pelvimetry is unclear. [New 2017] C

Skill and experience of birth attendant

The presence of a skilled birth attendant is essential for safe vaginal breech birth. C

Units with limited access to experienced personnel should inform women that vaginal breech birth is likely to be associated with greater risk and offer antenatal referral to a unit where skill levels and experience are greater. [New 2017] ☐

Intrapartum assessment and management of women presenting unplanned with breech presentation in labour

Where a woman presents with an unplanned vaginal breech labour, management should depend on the stage of labour, whether factors associated with increased complications are found, availability of appropriate clinical expertise and informed consent. [New 2017] C

Women near or in active second stage of labour should not be routinely offered caesarean section. [New 2017] ☐

Where time and circumstances permit, the position of the fetal neck and legs, and the fetal weight should be estimated using ultrasound, and the woman counselled as with planned vaginal breech birth. [New 2017] ☐

All maternity units must be able to provide skilled supervision for vaginal breech birth where a woman is admitted in advanced labour and protocols for this eventuality should be developed. [New 2017] ☐

What is appropriate intrapartum management of the term breech?

Are induction and augmentation appropriate?

Women should be informed that induction of labour is not usually recommended. D Augmentation of slow progress with oxytocin should only be considered if the contraction frequency is low in the presence of epidural analgesia. [New 2017] ☐

What is the role of epidural analgesia?

Women should be informed that the effect of epidural analgesia on the success of vaginal breech birth is unclear, but that it is likely to increase the risk of intervention. [New 2017]

What fetal monitoring should be recommended?

Women should be informed that while evidence is lacking, continuous electronic fetal monitoring may lead to improved neonatal outcomes. [New 2017] D

Where should vaginal breech birth take place?

Birth in a hospital with facilities for immediate caesarean section should be recommended with planned vaginal breech birth, but birth in an operating theatre is not routinely recommended. D

What guidelines should be in place for the management of breech birth?

Women should be informed that adherence to a protocol for management reduces the chances of early neonatal morbidity. [New 2017] C

The essential components of planned vaginal breech birth are appropriate case selection, management according to a strict protocol and the availability of skilled attendants. [New 2017]

Management of the first stage and passive second stage

Adequate descent of the breech in the passive second stage is a prerequisite for encouragement of the active second stage. [New 2017] D

What position should the woman be in for delivery during a vaginal breech birth?

Either a semirecumbent or an all-fours position may be adopted for delivery and should depend on maternal preference and the experience of the attendant. If the latter position is used, women should be advised that recourse to the semirecumbent position may become necessary. [New 2017]

What are the principles for the management of active second stage and vaginal breech birth?

Assistance, without traction, is required if there is delay or evidence of poor fetal condition. [New 2017]

All obstetricians and midwives should be familiar with the techniques that can be used to assist vaginal breech birth. The choice of manoeuvres used, if required to assist with delivery of the breech, should depend on the individual experience/preference of the attending doctor or midwife. [New 2017]

Management of the preterm breech

How should preterm singleton babies in breech presentation be delivered?

Women should be informed that routine caesarean section for breech presentation in spontaneous preterm labour is not recommended. The mode of delivery should be individualised based on the stage of labour, type of breech presentation, fetal wellbeing and availability of an operator skilled in vaginal breech delivery. C

Women should be informed that caesarean section for breech presentation in spontaneous preterm labour at the threshold of viability (22–25^{+6} weeks of gestation) is not routinely recommended. C

Women should be informed that planned caesarean section is recommended for preterm breech presentation where delivery is planned due to maternal and/or fetal compromise. [New 2017]

How should labour with a singleton preterm breech be managed?

Labour with a preterm breech should be managed as with a term breech. [New 2017] C

Where there is head entrapment, incisions in the cervix (vaginal birth) or vertical uterine incision extension (caesarean section) may be used, with or without tocolysis. D

Management of the twin pregnancy with a breech presentation

How should a first twin in breech presentation be delivered?

Women should be informed that the evidence is limited, but that planned caesarean section for a twin pregnancy where the presenting twin is breech is recommended. [New 2017] C

Routine emergency caesarean section for a breech first twin in spontaneous labour, however, is not recommended. The mode of delivery should be individualised based on cervical dilatation, station of the presenting part, type of breech presentation, fetal wellbeing and availability of an operator skilled in vaginal breech delivery. [New 2017] C

How should a second twin in breech presentation be delivered?

Routine caesarean section for breech presentation of the second twin is not recommended in either term or preterm deliveries. B

What organisational and governance arrangements should be in place to support a routine vaginal breech delivery service?

Simulation equipment should be used to rehearse the skills that are needed during vaginal breech birth by all doctors and midwives. ☐

Guidance for the case selection and management of vaginal breech birth should be developed in each department by the healthcare professionals who supervise such births. Adherence to the guidelines is recommended to reduce the risk of intrapartum complications. [New 2017] C

Departments should consider developing a checklist to ensure comprehensive counselling of the woman regarding planned mode of delivery for babies presenting by the breech. [New 2017] ☐

1. Purpose and scope

The aim of this guideline is to provide up-to-date information on the modes of delivery for women with breech presentation. The scope is confined to decision making regarding the route of delivery and choice of various techniques used during delivery. It does not include antenatal or postnatal care. External cephalic version (ECV) is the topic of the separate Royal College of Obstetricians and Gynaecologists (RCOG) Green-top Guideline No. 20a: External Cephalic Version and Reducing the Incidence of Term Breech Presentation.[1]

2. Introduction and background epidemiology

Breech presentation occurs in 3–4% of term deliveries and is more common preterm. It is associated with uterine and congenital abnormalities, has a significant recurrence risk and is more common in nulliparous women.[2] Term babies presenting by the breech have worse outcomes than cephalic ones, irrespective of the mode of delivery.[3]

Publication of the Term Breech Trial (TBT)[4] was followed by a large reduction in the incidence of planned vaginal birth. Nevertheless, vaginal breech births will continue, not merely because of failure to detect breech presentation and the limitations of ECV, but for reasons of maternal choice. Lack of experience has led to a loss of skills essential for these deliveries. Conversely, caesarean section can have serious long-term consequences.

3. Identification and assessment of evidence

This guideline was developed using standard methodology for developing RCOG Green-top Guidelines. The Cochrane Library (including the Cochrane Database of Systematic Reviews, the Database of Abstracts of Reviews of Effects [DARE] and the Cochrane Central Register of Controlled Trials [CENTRAL]), EMBASE, MEDLINE and Trip were searched for relevant papers. The search was inclusive of all relevant articles published between August 2005 and April 2016. The databases were searched using the relevant Medical Subject Headings (MeSH) terms, including all subheadings and synonyms, and this was combined with a keyword search. Search terms included 'breech', 'breech near presentation', 'breech presentation', 'breech near delivery', 'breech delivery', 'breech presentation and delivery', 'breech near extraction', 'breech extraction', 'Mauriceau-Smellie-Veit', 'Burns-Marshall', 'after-coming head' and 'external cephalic version'. The search was limited to studies on humans and papers in the English language. Relevant guidelines were also searched for using the same criteria in the National Guideline Clearinghouse and the National Institute for Health and Care Excellence (NICE) Evidence Search.

Where possible, recommendations are based on available evidence. Areas lacking evidence are highlighted and annotated as 'good practice points'. Further information about the assessment of evidence and the grading of recommendations may be found in Appendix I.

4. What information should be given to women with breech presentation at term?

Women with a breech presentation at term should be offered ECV unless there is an absolute contraindication. They should be advised on the risks and benefits of ECV and the implications for mode of delivery. **A**

Women who have a breech presentation at term following an unsuccessful or declined offer of ECV should be counselled on the risks and benefits of planned vaginal breech delivery versus planned caesarean section. ☐

Please refer to the RCOG Green-top Guideline No. 20a: External Cephalic Version and Reducing the Incidence of Term Breech Presentation.[1]

4.1 What information about the baby should be given to women with breech presentation at term regarding mode of delivery?

Women should be informed that planned caesarean section leads to a small reduction in perinatal mortality compared with planned vaginal breech delivery. Any decision to perform a caesarean section needs to be balanced against the potential adverse consequences that may result from this. **A**

Women should be informed that the reduced risk is due to three factors: the avoidance of stillbirth after 39 weeks of gestation, the avoidance of intrapartum risks and the risks of vaginal breech birth, and that only the last is unique to a breech baby. **B**

Women should be informed that when planning delivery for a breech baby, the risk of perinatal mortality is approximately 0.5/1000 with caesarean section after 39^{+0} weeks of gestation; and approximately 2.0/1000 with planned vaginal breech birth. This compares to approximately 1.0/1000 with planned cephalic birth. **C**

Selection of appropriate pregnancies and skilled intrapartum care may allow planned vaginal breech birth to be nearly as safe as planned vaginal cephalic birth. **C**

Women should be informed that planned vaginal breech birth increases the risk of low Apgar scores and serious short-term complications, but has not been shown to increase the risk of long-term morbidity. **B**

Clinicians should counsel women in an unbiased way that ensures a proper understanding of the absolute as well as relative risks of their different options. ☐

Observational, usually retrospective, series have consistently favoured elective caesarean birth over vaginal breech delivery. A meta-analysis of 27 studies examining term breech birth,[5] which included 258 953 births between 1993 and 2014, suggested that elective caesarean section was associated with a two- to five-fold reduction in perinatal mortality when compared with vaginal breech delivery although the absolute risk of perinatal mortality with vaginal delivery was 3/1000. This meta-analysis is limited by the retrospective nature of many of the studies and the absence of complete intention to treat analysis. The increased practice of caesarean section accounts for only a small proportion (16%) of the decline in delivery-related perinatal death.[6]

Evidence level 2++

The TBT[4] randomised 2088 women to either planned caesarean section or planned vaginal birth at 121 centres in 26 countries. This trial was by far the major contributor to the Cochrane Review[7] which demonstrated a reduction in perinatal mortality with planned caesarean section (RR 0.29, 95% CI 0.10–0.86) from 1.3 to 0.3%. This trial also reported a reduction in the composite outcome of serious neonatal morbidity (RR 0.36, 95% CI 0.19–0.65). A number of subanalyses examining operator experience, prolonged labour or augmentation, and national (high or low) perinatal mortality rates failed to identify a group for whom morbidity was not increased with planned vaginal delivery although they were underpowered to assess mortality rates.

A 2-year follow-up of 923 out of 1159 children from the TBT[8] showed no difference in 'death or neurodevelopmental delay' (RR 1.09, 95% CI 0.52–2.30). This renders the morbidity, but not mortality, findings (and therefore the 'intention to treat' analysis in the original trial paper) less important.

Evidence level 1+

The TBT led to wide-scale elective caesarean section for breech presentation, with a corresponding reduction in perinatal mortality.[9] However, criticism of the trial followed,[10–12] particularly regarding case selection and intrapartum management. For instance, 31% had no ultrasound (to exclude an extended neck), growth-restricted babies were included and a few women were randomised in violation of the protocol and included in the 'intention to treat' analysis. A senior obstetrician was absent from 31.9% of births and any obstetrician was absent from 13% of births in the planned vaginal delivery group. Electronic fetal monitoring (EFM) was not used in most and prolonged active second stage was not prohibited which, when it occurred, was associated with increased morbidity.[13] 'Serious' neonatal morbidity encompassed some frequently benign outcomes and was twice as common in countries with a low perinatal mortality rate (5.1% versus 2.5%). Both short-term morbidity and mortality (1.3%) in the planned vaginal delivery group were higher than subsequent series have reported.[14,15] Glezerman,[10] commenting on analysis by Su et al.,[13] argued that in only 16 of the 69 neonates with the primary composite outcome could this be related to mode of delivery. However, while some of the deaths may not be attributable to the vaginal breech birth, it is still reasonable to assume some would not have happened if a caesarean section had been performed at 39 weeks of gestation. This highlights a fundamental issue: by eliminating the last 1–3 weeks of pregnancy and labour, the perinatal death of at least 1/1000 babies,[16] cephalic or breech, could be prevented.

Evidence level 2+

The limitations of the TBT meant planned vaginal breech birth continued, notably in Scandinavia, France and the Netherlands. As a result, further mortality and short-term morbidity data have become available. Vlemmix et al.[15] published a population-based cohort study of 58 320 nonanomalous term babies presenting by the breech delivered between 1997 and 2007 from the Netherlands Perinatal Registry, evaluating the effect of increased elective caesarean following the TBT. The perinatal mortality of babies presenting by the breech halved from 0.13 to 0.07% (OR 0.51, 95% CI 0.28–0.93). For planned vaginal breech birth, however, it remained stable (OR 0.96, 95% CI 0.52–1.76). More importantly, the perinatal mortality was 0.16% in the planned vaginal birth group and 0% in the elective caesarean section group (P < 0.0001) post publication of the TBT report although this mortality rate with vaginal delivery was notably lower than that reported in the TBT (0.16% versus 1.3%). Elective caesarean also reduced the risk of low Apgar scores (less than 7 at 5 minutes; OR 0.12, 95% CI 0.09–0.16) and neonatal 'trauma' (OR 0.24, 95% CI 0.15–0.37) compared with planned vaginal birth. The differences in mortality and morbidity persisted among different birth weights, with parity and with type of breech. The authors estimated that 338 additional caesarean sections were performed for each perinatal death prevented.

Evidence level 2++

More strict selection and management protocols than those employed in the TBT have been employed in smaller retrospective studies from individual institutions. These have limited statistical power to detect an effect on mortality, but most report reassuring lower[17–21] results. Indeed, the rates of short-term morbidity compared with those reported in either the TBT or the Dutch study[4,15] suggest that although evidence for the individual components is poor, the selection and management criteria employed were beneficial. They might, therefore, reasonably be expected to improve mortality.

Evidence level 3

Examining the effect of more strict selection and management was the intention of the much larger PREMODA study.[14] The outcomes of 2526 planned vaginal breech deliveries were compared with 5579 planned caesarean deliveries in 174 units in France and Belgium over a 12-month period. The strict criteria included 'normal' (definition unstated) radiological pelvimetry which was performed in 82.5% of planned vaginal births, continuous EFM and routine ultrasound. As with the TBT,[4] induction or augmentation with oxytocin was allowed. Only 0.2% had an active second stage of more than 60 minutes, while 18.1% had a passive second stage (60 minutes or longer) compared with 5 and 3.1%, respectively, in the TBT.[4] Only 3.8% of vaginal deliveries had 'failed to progress' for more than 2 hours. Outcomes were analysed for neonates with no lethal congenital abnormality. In the planned vaginal delivery group, of whom 79% delivered vaginally, there were two deaths (0.08%); in the planned caesarean group, of whom 0.16% delivered vaginally, there were seven deaths (0.12%) (OR 0.64, 95% CI 0.13–3.06). Planned vaginal birth showed significant increases in Apgar scores of less than 7 at 5 minutes (OR 3.20, 95% CI 1.93–5.3) and total injuries, most of which were clavicular fractures or haematomata (OR 3.90, 95% CI 2.40–6.34). However, there was no difference in neonatal unit admissions (OR 1.33, 95% CI 0.94–1.86), or a composite measure of mortality or serious neonatal morbidity (OR 1.10, 95% CI 0.75–0.61). This remained after adjustment for other factors associated with this outcome (adjusted OR 1.40, 95% CI 0.89–2.23). The absolute risks for a 5-minute Apgar score of less than 7 (1.3%) and for perinatal mortality (0.08%) compared favourably to both the TBT and the Dutch cohort study.[4,15]

Evidence level 2++

Although data were collected prospectively in each centre, participants were not registered at inclusion, potentially enabling accusations of bias; furthermore, classification regarding the intended mode of delivery was made retrospectively. In addition, demographic differences existed between the two groups: notably, the planned vaginal birth babies were smaller. The study does not enable an accurate comparison of planned caesarean with breech birth; with a later gestation at planned vaginal birth but all babies alive at inclusion, it examines the effect of strictly managed labour more than the effect of planned elective caesarean delivery after 39^{+0} weeks of gestation.

Evidence level 2++

Elective caesarean section exerts a protective effect on perinatal mortality, as well as short-term, but probably not long-term, morbidity[8] although the effect is smaller than suggested by the TBT. Some of the risk is due to the earlier gestation at which elective caesarean section is performed, while some is due to the elimination of labour which, even for a cephalic baby, can lead to mortality. The excess risk of breech compared with cephalic labour is relatively small (1/1000), and implementation of strict selection and intrapartum management criteria, together with skilled support, may reduce it further.[14] Perinatal mortality is also slightly increased by vaginal birth after caesarean section (VBAC), which nevertheless remains a common option.[22] Any benefit from elective caesarean section must be viewed in the light of the small increase in complications associated with subsequent pregnancies. Furthermore, caesarean birth has been associated with long-term health issues in the offspring.[23]

Evidence level 2+

4.2 What information should women having breech births be given about their own immediate and future health?

Women should be informed that planned caesarean section for breech presentation at term carries a small increase in immediate complications for the mother compared with planned vaginal birth. **A**

Women should be informed that maternal complications are least with successful vaginal birth; planned caesarean section carries a higher risk, but the risk is highest with emergency caesarean section which is needed in approximately 40% of women planning a vaginal breech birth. **B**

Women should be informed that caesarean section increases the risk of complications in future pregnancy, including the risks of opting for VBAC, the increased risk of complications at repeat caesarean section and the risk of an abnormally invasive placenta. **B**

Women should be given an individualised assessment of the long-term risks of caesarean section based on their individual risk profile and reproductive intentions, and counselled accordingly. ☐

Maternal outcomes, particularly short term, depend on the category of lower segment caesarean section, with emergency carrying a higher risk than elective. Emergency caesarean section rates with planned vaginal birth vary from 29%[14] to 45%.[15]

Evidence level 2+

A modest short-term increase in maternal morbidity (RR 1.29, 95% CI 1.03–1.61) is reported with planned caesarean section in a meta-analysis of randomised controlled trials.[7] Longer term morbidity in the TBT was similar[24] although other risks have been documented. The risks associated with caesarean section are documented in the RCOG patient information leaflet: Choosing to have a caesarean section.[23]

Evidence level 1+

For subsequent pregnancies, having had a planned caesarean (compared with planned vaginal) birth causes a three-fold increase in uterine scarring; more than half of all women with at least one prior caesarean section have another.[25] The risks of blood transfusion, endometritis, hysterectomy and death are increased in women with a previous caesarean section (irrespective of whether they attempt a VBAC) when compared with those who have previously delivered vaginally.[22] The risk of scar rupture during attempted vaginal birth after one caesarean section is approximately 0.5%.[22,26,27] In developing countries, particularly where birth outside hospital is usual and access to healthcare is poor, the effect on maternal outcomes is likely to be considerably greater.[28]

Evidence level 2+

A further maternal issue is that of placenta praevia and placenta accreta,[29] or abnormally invasive placentation, for which prior caesarean delivery is the principal risk factor. The risk of abnormally invasive placentation increases from 0.31% with one prior caesarean section to 2.33% with four[30] and the incidence is rising. The risk is higher after elective compared with emergency caesarean section.[31] This complication can lead to massive haemorrhage, hysterectomy, urinary tract injury and maternal death.

4.3 What information should women having breech births be given about the health of their future babies?

Women should be informed that caesarean section has been associated with a small increase in the risk of stillbirth for subsequent babies although this may not be causal.

C

In a systematic review and meta-analysis, O'Neill et al.[32] compared the risk of stillbirth and miscarriage in a subsequent pregnancy with a previous caesarean or vaginal delivery. Examining data from 1 961 829 pregnancies and 7308 events, they reported an increase in the risk of all stillbirths and unexplained stillbirths (OR 1.47, 95% CI 1.20–1.80). These findings have been disputed:[33] the indication for the caesarean may account for the increase.

Evidence level 2++

Future pregnancies are also at risk of uterine rupture when VBAC is attempted; the risk of delivery-related perinatal mortality after one caesarean is up to 12.9/10 000, much of which is attributable to uterine rupture. Please refer to the RCOG Green-top Guideline No. 45: Birth after previous caesarean birth.[22]

5. What factors affect the safety of vaginal breech delivery?

5.1 Antenatal assessment

Following the diagnosis of persistent breech presentation, women should be assessed for risk factors for a poorer outcome in planned vaginal breech birth. If any risk factor is identified, women should be counselled that planned vaginal birth is likely to be associated with increased perinatal risk and that delivery by caesarean section is recommended.

Women should be informed that a higher risk planned vaginal breech birth is expected where there are independent indications for caesarean section and in the following circumstances: C

Hyperextended neck on ultrasound.

High estimated fetal weight (more than 3.8 kg).
Low estimated weight (less than tenth centile).
Footling presentation.

Evidence of antenatal fetal compromise.

The role of pelvimetry is unclear. C

The safety of planned vaginal breech birth is dependent on case selection, operator skill and intrapartum management. There is, however, a paucity of good evidence regarding factors that increase the risks of vaginal breech birth. Traditional contraindications and those which caused women to be ineligible for the TBT included an estimated fetal weight greater than 4 kg, footling breech presentation, an extended neck, 'obstructing' fetal abnormalities and an existing indication for caesarean birth. The lower perinatal mortality and morbidity in the PREMODA study[14] and in the post TBT population-based cohorts[15] are partly attributable to stricter case selection and management. The findings of these studies, therefore, have limited applicability where their inclusion criteria were not met or their management protocols were not followed. Indeed, in a French cohort, composite morbidity and mortality were lower (OR 0.27, 95% CI 0.09–0.85) among units that applied the consensus guidelines.[34] Evidence level 2+

Factors associated with increased perinatal morbidity at vaginal breech birth in the PREMODA cohort included non-European or African origin, gestational age of less than 39 weeks at birth, birthweight less than the tenth centile and annual number of maternity unit births less than 1500.[35] Molkenboer et al.[36] assessed 183 children, born by vaginal breech delivery, at 2 years of age and, from multiple logistic regression, concluded that there was an increased risk of neurodevelopmental delay when the birthweight had been more than 3.5 kg. As the PREMODA study[14] used an estimated weight upper limit of 3.8 kg, the reassuring outcomes of the study cannot be extrapolated for larger babies.

The role of pelvimetry is unclear. Largely abandoned in the UK, it was employed in 82.5% of planned vaginal births in the PREMODA study[14] and van Loon et al.[37] reported that the use of pelvimetry reduced the emergency caesarean section rate. Further evidence is required to more clearly delineate the role of pelvimetry in breech presentation. Evidence level 2

5.2 Skill and experience of birth attendant

The presence of a skilled birth attendant is essential for safe vaginal breech birth. C

Units with limited access to experienced personnel should inform women that vaginal breech birth is likely to be associated with greater risk and offer antenatal referral to a unit where skill levels and experience are greater.

Although largely unproven, the availability of skilled personnel is likely to strongly influence perinatal outcomes. A senior obstetrician was present at 92.3% of all vaginal deliveries in the PREMODA series;[14] similar figures apply to the smaller consecutive case series describing successful vaginal breech birth.[17–21,38] Evidence level 2+

The decline in vaginal breech delivery in the UK has led to a widespread lack of experience which itself threatens the safety of planned, and the unplanned but inevitable, vaginal breech birth. An inability of a unit to reliably provide experienced personnel for the delivery is a contraindication to a recommendation of planned vaginal birth.

5.3 Intrapartum assessment and management of women presenting unplanned with breech presentation in labour

Where a woman presents with an unplanned vaginal breech labour, management should depend on the stage of labour, whether factors associated with increased complications are found, availability of appropriate clinical expertise and informed consent. **C**

Women near or in active second stage of labour should not be routinely offered caesarean section. ☐

Where time and circumstances permit, the position of the fetal neck and legs, and the fetal weight should be estimated using ultrasound, and the woman counselled as with planned vaginal breech birth. ☐

All maternity units must be able to provide skilled supervision for vaginal breech birth where a woman is admitted in advanced labour and protocols for this eventuality should be developed. ☐

UK data reported that breech presentation at term is not diagnosed until labour in about 25% of women.[39] In some women, labour will be so quick that vaginal breech birth is inevitable and assessment using ultrasound is impossible. Unplanned vaginal breech birth is associated with increased risk,[13] but the data on planned vaginal birth cannot be simply extrapolated to support routine late labour caesarean section.

Evidence level 2+

Where labour is progressing rapidly, there is a balance of risks: attempting caesarean section where the breech is very low is likely to be associated with increased perinatal and maternal risk; assessment should include what is feasible. Attempts at vaginal delivery in theatre with spinal anaesthesia or caesarean section with the breech on the perineum are likely to be associated with both increased perinatal and maternal risk.

6. What is appropriate intrapartum management of the term breech?

There is a paucity of evidence regarding the best management of the breech fetus in labour. Recommendations are based on physiology, best practice experience and the management protocols of series with low complication rates. The limited evidence and expert opinion broadly divides into two groups: a more interventionist approach supported by data from the large PREMODA study[14] and a less medicalised approach[21,40] which is more traditional in the UK. Both strategies advocate close supervision and the not infrequent need for caesarean section or intervention during breech birth.

Evidence level 4

6.1 Are induction and augmentation appropriate?

Women should be informed that induction of labour is not usually recommended. **D** Augmentation of slow progress with oxytocin should only be considered if the contraction frequency is low in the presence of epidural analgesia.

Both induction and augmentation of labour were used in the PREMODA study[14] in 8.9 and 74.1% of vaginal breech births, respectively. This very high rate of augmentation, coupled with a very low incidence of 'slow dilatation', suggests a more prophylactic than a therapeutic role. As a means to treat dystocia, augmentation should usually be avoided as adequate progress may be the best evidence for adequate fetopelvic proportions. However, if epidural analgesia has been used and the contraction frequency is low, its use should not be excluded. Notably, labour augmentation is not supported by many experienced advocates of vaginal breech birth[40] who favour a less interventionist approach. Continuous support is known to reduce labour length and operative delivery with a cephalic presentation.[41]

Evidence level 2

6.2 What is the role of epidural analgesia?

Women should be informed that the effect of epidural analgesia on the success of vaginal breech birth is unclear, but that it is likely to increase the risk of intervention.

There is limited evidence addressing this. However, with a cephalic presentation, a Cochrane meta-analysis[42] concluded that epidural anaesthesia increases the risk of assisted vaginal delivery. As vaginal breech delivery cannot be expedited until its final stages, epidural anaesthesia might increase the risk of caesarean section. Vaginal breech birth is usually easier if a mother is able to bear down effectively and an epidural may interfere with this. A less interventionist approach advocates a calm atmosphere with continuous support as a means to avoid epidural analgesia.[41] With a more interventionist approach,[14] seldom used in the UK, epidural analgesia is less likely to have a detrimental effect.

Evidence level 2

6.3 What fetal monitoring should be recommended?

Women should be informed that while evidence is lacking, continuous EFM may lead to improved neonatal outcomes. **D**

EFM was employed in the PREMODA study,[14] where excellent results of planned vaginal breech birth are documented. Breech presentation is associated with an increased risk of cord prolapse. During delivery, cord compression as the head enters the pelvis is common; this is likely to be better tolerated by a fetus that is not hypoxic. Equally, good fetal tone enables easier breech birth and is more likely in a nonhypoxic fetus. While good evidence is lacking and higher intrapartum caesarean section rates should be expected, EFM is likely to improve neonatal outcomes.

Evidence level 3

Where EFM is declined, intermittent auscultation should be performed as for a cephalic fetus, with conversion to EFM if any abnormality is detected.

Where EFM is considered abnormal before the active second stage, caesarean delivery is recommended unless the buttocks are visible or progress is rapid. Fetal blood sampling of the buttocks although technically possible, is not recommended.

Evidence level 4

6.4 Where should vaginal breech birth take place?

Birth in a hospital with facilities for immediate caesarean section should be recommended with planned vaginal breech birth, but birth in an operating theatre is not routinely recommended.

D

Labour complications, including the need for caesarean section in up to 45% of women, are more common with breech presentation.[4,14]

Evidence level 2

No studies have looked at the effect of delivery in theatre versus delivery in a labour room on the outcome of labour. However, transfer from the relative familiarity of the labour room to theatre is likely to increase stress in the mother. Birth in water is not recommended due to the lack of gravity and difficulty anticipated if intervention during breech delivery is required.

Evidence level 4

6.5 What guidelines should be in place for the management of breech birth?

Women should be informed that adherence to a protocol for management reduces the chances of early neonatal morbidity.

C

The essential components of planned vaginal breech birth are appropriate case selection, management according to a strict protocol and the availability of skilled attendants.

Evidence from a number of retrospective studies shows that vaginal breech birth is more successful in women where strict guidelines for selection are used.[34,43]

Evidence level 2

A Cochrane review of expedited versus conservative approaches to breech delivery found no studies that address this issue.[44] Accepted principles, however, are established. These include assisted breech delivery rather than breech extraction and continuous support for and communication with the mother.

Evidence level 3

6.6 Management of the first stage and passive second stage

Adequate descent of the breech in the passive second stage is a prerequisite for encouragement of the active second stage.

D

The first stage of labour should be managed according to the same principles as with a cephalic presentation. To reduce the risk of cord compression, amniotomy is reserved for definite clinical indications. Where the progress is slow, caesarean section should be considered. In the presence of epidural analgesia and a contraction frequency of fewer than four in ten, however, oxytocin may be considered. A passive second stage to allow the descent of the breech to the perineum prior to active pushing is recommended.[14] If the breech is not visible within 2 hours of the passive second stage, caesarean section should normally be recommended.

Evidence level 2

6.7 What position should the woman be in for delivery during a vaginal breech birth?

Either a semirecumbent or an all-fours position may be adopted for delivery and should depend on maternal preference and the experience of the attendant. If the latter position is used, women should be advised that recourse to the semirecumbent position may become necessary.

There are limited data in relation to position and outcome of delivery in vaginal breech birth. Comparison of an upright position with historical data is favourable,[45] with the rate of maternal perineal injuries being lower. In a cephalic presentation, an upright position is associated with a shorter second stage.[46] Compared with the dorsal supine position, the all-fours position considerably increases pelvic dimensions on magnetic resonance imaging.[47] Delivery with the woman in a forward-facing position (squatting or all fours) is the position favoured by many experienced operators[40] claiming, particularly, that it is easier to observe for signs that the delivery will be more difficult.

Evidence level 3

The principal difficulty with an all-fours position is when manoeuvres are required. Most obstetricians are more familiar with performing these in a difficult breech birth with the woman in the dorsal position. If a woman chooses a forward-facing position, they should be made aware that if interventions are required, they may be given assistance to move into a dorsal recumbent position. Manoeuvres in an all-fours position can be performed, however,[40] and if the operator has the skills of undertaking the manoeuvres with the mother in a forward position these should be performed without delay.

Evidence level 4

6.8 What are the principles for the management of active second stage and vaginal breech birth?

Assistance, without traction, is required if there is delay or evidence of poor fetal condition.

All obstetricians and midwives should be familiar with the techniques that can be used to assist vaginal breech birth. The choice of manoeuvres used, if required to assist with delivery of the breech, should depend on the individual experience/preference of the attending doctor or midwife.

While involuntary pushing may occur earlier, encouragement of maternal effort should not start until the breech is visible. Once the buttocks have passed the perineum, significant cord compression is common. Traction should also be avoided; a 'hands-off' approach is required, but with appropriate and timely intervention if progress is not made once the umbilicus has delivered or there is poor tone, extended arms or an extended neck. Tactile stimulation of the fetus may result in reflex extension of the arms or head, and should be minimised. Care must be taken in all manoeuvres to avoid fetal trauma: the fetus should be grasped around the pelvic girdle (not soft tissues) and the neck should never be hyperextended. Selective rather than routine episiotomy is recommended.

Signs that delivery should be assisted include lack of tone or colour, or delay, commonly due to extended arms or an extended neck. In general, intervention to expedite breech birth is required if there is evidence of poor fetal condition or if there is a delay of more than 5 minutes from delivery of the buttocks to the head, or of more than 3 minutes from the umbilicus to the head.

The semirecumbent position

There is little comparative evidence regarding techniques of assisted breech delivery. If the back starts to rotate posteriorly, gentle rotation without traction should be used to ensure that it remains anterior. Once the scapula is visible, the arms can be hooked down by inserting a finger in the elbow and flexing the arms across the chest or, if nuchal, Lovset's manoeuvre is advised. Delivery is achieved either with the Mauriceau-Smellie-Veit manoeuvre or with forceps. Suprapubic pressure will aid flexion if there is delay due to an extended neck. Delivery using the Burns-Marshall technique is not advised due to concern of over extension of the fetal neck.

An alternative is the routine use of the Bracht manoeuvre, a mode of delivery favoured in Europe and in the PREMODA study.[14] Following spontaneous delivery to the level of the umbilicus, the body is grasped in both hands keeping the legs flexed against the baby's abdomen and, without traction, is brought up against the symphysis pubis, frequently accompanied by suprapubic pressure.

Evidence level 3

The all-fours position

The limited evidence suggests[21,45] that spontaneous delivery without assistance will occur more often. The technique and manoeuvres, if required, are described in detail in an article by Evans.[40]

Evidence level 4

7 Management of the preterm breech

7.1 How should preterm singleton babies in breech presentation be delivered?

Women should be informed that routine caesarean section for breech presentation in spontaneous preterm labour is not recommended. The mode of delivery should be individualised based on the stage of labour, type of breech presentation, fetal wellbeing and availability of an operator skilled in vaginal breech delivery.

C

Women should be informed that caesarean section for breech presentation in spontaneous preterm labour at the threshold of viability (22–25^{+6} weeks of gestation) is not routinely recommended.

C

Women should be informed that planned caesarean section is recommended for preterm breech presentation where delivery is planned due to maternal and/or fetal compromise.

☐

Breech presentation is more common preterm and most preterm deliveries are unplanned as a result of spontaneous preterm labour. Adequate high-quality evidence in relation to the management of preterm breech birth has proved impossible[48] and the evidence regarding term breech should not be extrapolated directly to preterm breech delivery. Rates of perinatal morbidity and mortality are higher following preterm delivery, irrespective of the mode of delivery.

Evidence level 3

A Cochrane systematic review assessed the effects of planned immediate caesarean section versus planned vaginal birth for women thought to be in preterm labour with a singleton (cephalic or breech presentation).[49] Data were very limited on clinically relevant outcomes and confidence intervals were wide, but there were no significant differences with respect to immediate outcomes and no significant differences between the two groups for abnormal follow-up in childhood. Maternal puerperal pyrexia was significantly more likely in the caesarean section group (RR 2.98, 95% CI 1.18–7.53), but there were no other significant differences in maternal morbidity outcomes.

A systematic review and meta-analysis of nonrandomised studies assessing vaginal delivery versus caesarean section in preterm breech delivery included seven studies involving a total of 3557 women.[50] The primary outcome was neonatal mortality. Preterm birth was defined as a gestational age of 25^{+0} up to 36^{+6} weeks, and studies published before 1980 or defined by low birthweight rather than gestational age were excluded. The weighted risk of neonatal mortality was 3.8% in the caesarean section group and 11.5% in the vaginal delivery group (pooled RR 0.63, 95% CI 0.48–0.81). Mortality differences varied according to study setting with the largest study of 2674 women in Sweden demonstrating a halving of neonatal mortality with caesarean section.[51]

Several retrospective cohort studies have evaluated the relationship between low birthweight and breech delivery. Muhuri et al.[52] reported that very low birthweight breech or malpresenting fetuses delivered by a primary caesarean section had significantly lower adjusted relative risks of neonatal death compared with those delivered vaginally. Demirci et al.[53] reported no difference in neonatal complications between vaginal delivery and caesarean section for babies with birthweights of less than 1000 g or more than 1500 g, but reported an increased mortality associated with vaginal delivery for babies with birthweights of 1000–1500 g. A population-based study of preterm low birthweight (less than 2500 g) newborns in California reported significantly increased neonatal mortality with vaginal delivery compared with caesarean section in all birthweight groups and increased birth trauma in babies with birthweights of 1500–2500 g.[54] However, the caesarean section rate was 86%, suggesting that few vaginal breech deliveries are conducted and experience may be limited. A further study of survival and morbidity for the breech fetus at the threshold of viability (23^{+0} to 24^{+6} weeks of gestation and 400–750 g birthweight) had similar proportions of vaginal and caesarean deliveries.[55] Caesarean delivery was associated with a survival benefit across all birthweights, but morbidity was higher in the caesarean section group. It has been suggested that the lower gestational age of breech babies in a preterm cohort may account for the apparently increased mortality and morbidity.[56]

Evidence level 2

Up to 25% of all preterm deliveries are iatrogenic due to antenatal complications, such as pre-eclampsia, fetal growth restriction and antepartum haemorrhage.[57] For women requiring planned delivery for maternal and/or fetal compromise with a viable fetus in breech presentation, elective caesarean section is recommended.

Evidence level 4

Although the majority of obstetricians use caesarean section for the uncomplicated preterm breech, only a minority believe that there is sufficient evidence to justify this policy.[48] There is general acknowledgement that the retrospective studies cited above which suggest that caesarean section confers a better outcome in this situation have been subject to selection bias.[58,59] The poor outcome for very low birthweight infants is mainly related to complications of prematurity and not the mode of delivery.[60]

Evidence level 2

In the absence of robust evidence that a preterm baby presenting by the breech needs to be delivered routinely by immediate caesarean section, the decision about mode of delivery should be made by an experienced obstetrician following a thorough clinical evaluation, and in consultation with the woman and partner.[61] The stage of labour is critical: the course of preterm labour may be protracted and unpredictable, immediate caesarean section may lead to earlier delivery than vaginal and might hinder the effect of steroids or prevent the use of magnesium. Likewise, it is prudent to reassess the patient in theatre immediately prior to caesarean section in order to avoid the unfortunate situation where the uterus is found to be empty with the fetus already delivered vaginally.[62]

Evidence level 4

7.2 How should labour with a singleton preterm breech be managed?

Labour with a preterm breech should be managed as with a term breech.

C

Where there is head entrapment, incisions in the cervix (vaginal birth) or vertical uterine incision extension (caesarean section) may be used, with or without tocolysis.

D

Evidence concerning the management of preterm labour with a breech presentation is lacking. Routine amniotomy should be avoided. A specific problem encountered during preterm breech delivery is delivery of the trunk through an incompletely dilated cervix; this occurs in up to 14% of vaginal deliveries.[63] In this situation, lateral cervical incisions have been used to release the after-coming head. The RCOG StratOG programme recommends incisions at 2, 6 and 10 o'clock. Similar rates of head entrapment have been described for vaginal and abdominal delivery.[64] For head entrapment at caesarean delivery, it may be necessary to extend the uterine incision to a J shape or inverted T.

Evidence level 3

8. Management of the twin pregnancy with a breech presentation

8.1 How should a first twin in breech presentation be delivered?

Women should be informed that the evidence is limited, but that planned caesarean section for a twin pregnancy where the presenting twin is breech is recommended.

C

Routine emergency caesarean section for a breech first twin in spontaneous labour, however, is not recommended. The mode of delivery should be individualised based on cervical dilatation, station of the presenting part, type of breech presentation, fetal wellbeing and availability of an operator skilled in vaginal breech delivery.

C

Almost half of all twin pregnancies will deliver preterm and decisions regarding mode of delivery need to be made in that context. If preterm delivery has not occurred, delivery from 37 weeks of gestation is now recommended.[65] Similar to preterm breech presentation, high-quality evidence is lacking in relation to the management of twin birth and breech presentation. In a systematic review of three cohort studies (1812 women) and one randomised controlled trial (120 women), twins with the first twin presenting as breech were less likely to have a low 5-minute Apgar score if they had a planned caesarean section (OR 0.33, 95% CI 0.17–0.65).[66] A further study[67] compared the outcomes of breech presenting first twins over two time periods, where the caesarean section rate increased from 21% to almost 95%. No significant differences in neonatal morbidity or mortality were reported, but there was an increase in maternal morbidity in association with caesarean delivery. In a retrospective cohort study of 195 term twin pregnancies where the presenting twin was breech, Sentilhes et al.[68] compared the outcomes of the 124 attempts at vaginal delivery (48% vaginal delivery rate) with elective caesarean. There was no difference in the composite primary outcome. Steins Bisschop et al.[69] in a 2012 review concluded that there was no benefit to the near routine practice of caesarean section if the first twin was breech. One common concern is the interlocking of twins. Although Cohen et al.[70] reported an incidence of 1 in 817, this is probably an underestimate.

Evidence level 2+

Given the uncertain risks, the quality of the evidence, the continuing controversy with singletons and the exclusion of a nonvertex twin in the 2013 twin trial,[71] a change to the current practice of planned caesarean section is not recommended.

Evidence level 1+

8.2 How should a second twin in breech presentation be delivered?

Routine caesarean section for breech presentation of the second twin is not recommended in either term or preterm deliveries.

B

The second twin is nonvertex at the time of delivery in about 40% of twin pregnancies. One randomised study has been conducted of twin deliveries where the presentation of the second twin was nonvertex.[72] The results showed no difference in 5-minute Apgar scores or in any other indices of neonatal morbidity between the two groups, but the power to detect differences was low as the study only included 60 women with twins. Barrett et al.[71] randomised 1398 women with a twin pregnancy at 32 to 38^{+6} weeks of gestation to planned caesarean section or planned vaginal birth. Outcomes of planned vaginal delivery included 507 women (36% of all planned vaginal births) whose second twin was presenting as nonvertex. This trial concluded there was no difference in the composite primary outcome of mortality or serious morbidity. However, the caesarean section rate was almost 44% among planned vaginal births and a subgroup analysis of the second twins presenting nonvertex was not available.

Evidence level 1+

The observational studies report conflicting results. Ginsberg and Levine[73] reported that with second twin deliveries, low Apgar scores were less frequent when delivery was by caesarean section. A population-based cohort study[74] of twin deliveries in the USA, using birth certificates and reporting on infants weighing 1500–4000 g, found a significantly higher frequency of neonatal death, injury and perinatal morbidity when both twins of a vertex/nonvertex presentation were delivered vaginally than when both twins were delivered by caesarean section.

Evidence level 2

In contrast, a study in France of 614 twins showed no significant morbidity differences and concluded that the type of presentation should not influence the choice of mode of delivery.[75] In a retrospective cohort study[76] of 1038 twins in the UK, neonatal morbidity after vaginal delivery was similar for nonvertex-presenting and vertex second twins, particularly at lower gestational ages.

Evidence level 2

The presentation of the second twin at delivery is not always predictable. The chance of cephalic delivery may be improved by routinely guiding the head of the second twin towards the pelvis during and immediately after delivery of the first twin. On the other hand, some attendants prefer to routinely expedite delivery of the second twin by internal version and breech extraction irrespective of the presentation. There is no evidence as to which is safest.

9. What organisational and governance arrangements should be in place to support a routine vaginal breech delivery service?

Simulation equipment should be used to rehearse the skills that are needed during vaginal breech birth by all doctors and midwives. ☐

Guidance for the case selection and management of vaginal breech birth should be developed in each department by the healthcare professionals who supervise such births. Adherence to the guidelines is recommended to reduce the risk of intrapartum complications. **C**

Departments should consider developing a checklist to ensure comprehensive counselling of the woman regarding planned mode of delivery for babies presenting by the breech. ☐

The evidence discussed on vaginal breech birth supports the adherence to a strict management protocol[14,34,43] and the presence of skilled birth attendants.[14]

Evidence level 3

10. Recommendations for future research

Evaluation of all-fours position for vaginal breech birth.

Evaluation of the role of pelvimetry in planning of vaginal breech delivery.
Evaluation of the effect of epidural analgesia on vaginal breech birth.

11. Auditable topics

Documentation of discussion regarding mode of delivery (100%).
Vaginal delivery rates in women planning vaginal breech delivery.

Rate of adverse neonatal and maternal outcomes following planned and actual breech birth. Percentage of staff who have undergone training in vaginal breech delivery (100%).

12. Useful links and support groups

NHS Choices. Baby positions in the womb. [http://www.nhs.uk/conditions/pregnancy-and-baby/pages/breech-birth. aspx].

Royal College of Midwives. Vaginal or caesarean delivery? How research has turned breech birth around. [https://www.rcm.org.uk/learning-and-career/learning-and-research/ebm-articles/vaginal-or-caesarean-delivery-how-research].

National Institute for Health and Clinical Excellence. Multiple pregnancy: antenatal care for twin and triplet pregnancies. NICE clinical guideline 129. Manchester: NICE; 2011. [https://www.nice.org.uk/guidance/cg129].

Royal College of Obstetricians and Gynaecologists. Caesarean Section. Consent Advice No. 7. London: RCOG; 2009. [https://www.rcog.org.uk/globalassets/documents/guidelines/consent-advice/ca7-15072010.pdf].

Royal College of Obstetricians and Gynaecologists. A breech baby at the end of pregnancy. Information for you. London: RCOG; 2008. [https://www.rcog.org.uk/en/patients/patient-leaflets/breech-baby-at-the-end-of-pregnancy/].

Royal College of Obstetricians and Gynaecologists. Turning a breech baby in the womb (external cephalic version). Information for you. London: RCOG; 2008. [https://www.rcog.org.uk/en/patients/patient-leaflets/turning-a-breech-baby-in-the-womb/].

Royal College of Obstetricians and Gynaecologists. Birth options after previous caesarian section. Information for you. London: RCOG; 2016. [https://www.rcog.org.uk/en/patients/patient-leaflets/birth-after-previous-caesarean/].

References

1. Royal College of Obstetricians and Gynaecologists. External Cephalic Version and Reducing the Incidence of Term Breech Presentation. Green-top Guideline No. 20a. London: RCOG; 2017.
2. Fruscalzo A, Londero AP, Salvador S, Bertozzi S, Biasioli A, Della Martina M, et al. New and old predictive factors for breech presentation: our experience in 14 433 singleton pregnancies and a literature review. J Matern Fetal Neonatal Med 2014;27:167–72.
3. Danielian PJ, Wang J, Hall MH. Long-term outcome by method of delivery of fetuses in breech presentation at term: population based follow up. BMJ 1996;312:1451–3.
4. Hannah ME, Hannah WJ, Hewson SA, Hodnett ED, Saigal S, Willan AR. Planned caesarean section versus planned vaginal birth for breech presentation at term: a randomised multicentre trial. Term Breech Trial Collaborative Group. Lancet 2000;356: 1375–83.
5. Berhan Y, Haileamlak A. The risks of planned vaginal breech delivery versus planned caesarean section for term breech birth: a meta-analysis including observational studies. BJOG 2016;123: 49–57.
6. Pasupathy D, Wood AM, Pell JP, Fleming M, Smith GC. Time trend in the risk of delivery-related perinatal and neonatal death associated with breech presentation at term. Int J Epidemiol 2009;38:490–8.
7. Hofmeyr GJ, Hannah M, Lawrie TA. Planned caesarean section for term breech delivery. Cochrane Database Syst Rev 2015;(7): CD000166.
8. Whyte H, Hannah ME, Saigal S, Hannah WJ, Hewson S, Amankwah K, et al.; Term Breech Trial Collaborative Group. Outcomes of children at 2 years after planned cesarean birth versus planned vaginal birth for breech presentation at term: the International Randomized Term Breech Trial. Am J Obstet Gynecol 2004;191:864–71.
9. Rietberg CC, Elferink-Stinkens PM, Visser GH. The effect of the Term Breech Trial on medical intervention behaviour and neonatal outcome in The Netherlands: an analysis of 35,453 term breech infants. BJOG 2005;112:205–9.
10. Glezerman M. Five years to the term breech trial: the rise and fall of a randomized controlled trial. Am J Obstet Gynecol 2006;194:20–5.
11. Lawson GW. The term breech trial ten years on: primum non nocere? Birth 2012;39:3–9.
12. Goffinet F, Azria E, Kayem G, Schmitz T, Deneux-Tharaux C. Re: the risks of planned vaginal breech delivery versus planned caesarean section for term breech birth: a meta-analysis including observational studies: Let's avoid simplistic radicalism when reality is complex. BJOG 2016;123:145–7.
13. Su M, McLeod L, Ross S, Willan A, Hannah WJ, Hutton E, et al.; Term Breech Trial Collaborative Group. Factors associated with adverse perinatal outcome in the Term Breech Trial. Am J Obstet Gynecol 2003;189:740–5.
14. Goffinet F, Carayol M, Foidart JM, Alexander S, Uzan S, Subtil D, et al.; PREMODA Study Group. Is planned vaginal delivery for breech presentation at term still an option? Results of an observational prospective survey in France and Belgium. Am J Obstet Gynecol 2006;194:1002–11.
15. Vlemmix F, Bergenhenegouwen L, Schaaf JM, Ensing S, Rosman AN, Ravelli AC, et al. Term breech deliveries in the Netherlands: did the increased cesarean rate affect neonatal outcome? A population-based cohort study. Acta Obstet Gynecol Scand 2014;93:888–96.
16. Smith GC. Life-table analysis of the risk of perinatal death at term and post term in singleton pregnancies. Am J Obstet Gynecol 2001;184:489–96.
17. Hellsten C, Lindqvist PG, Olofsson P. Vaginal breech delivery: is it still an option? Eur J Obstet Gynecol Reprod Biol 2003;111:122–8.
18. Vistad I, Cvancarova M, Hustad BL, Henriksen T. Vaginal breech delivery: results of a prospective registration study. BMC Pregnancy Childbirth 2013;13:153.
19. Toivonen E, Palom€aki O, Huhtala H, Uotila J. Selective vaginal breech delivery at term – still an option. Acta Obstet Gynecol Scand 2012;91:1177–83.
20. Doyle NM, Riggs JW, Ramin SM, Sosa MA, Gilstrap LC 3rd. Outcomes of term vaginal breech delivery. Am J Perinatol 2005;22:325–8.

21. Borbolla Foster A, Bagust A, Bisits A, Holland M, Welsh A. Lessons to be learnt in managing the breech presentation at term: an 11-year single-centre retrospective study. Aust N Z J Obstet Gynaecol 2014;54:333–9.
22. Royal College of Obstetricians and Gynaecologists. Birth after Previous Caesarean Birth. Green-top Guideline No. 45. London: RCOG; 2015.
23. Royal College of Obstetricians and Gynaecologists. Choosing to have a Caesarean Section. Information for you. London: RCOG; 2015 https://www.rcog.org.uk/en/patients/patient-leaflets/choosing-to-have-a-caesarean-section/.
24. Hannah ME, Whyte H, Hannah WJ, Hewson S, Amankwah K, Cheng M, et al.; Term Breech Trial Collaborative Group. Maternal outcomes at 2 years after planned cesarean section versus planned vaginal birth for breech presentation at term: the international randomized Term Breech Trial. Am J Obstet Gynecol 2004;191:917–27.
25. Uddin SF, Simon AE. Rates and success rates of trial of labor after cesarean delivery in the United States, 1990–2009. Matern Child Health J 2013;17:1309–14.
26. Guise JM, Eden K, Emeis C, Denman MA, Marshall N, Fu R, et al. Vaginal Birth after Cesarean: New Insights. Evidence Report/ Technology Assessment No. 191. Rockville, MD: AHRQ; 2010.
27. Landon MB, Hauth JC, Leveno KJ, Spong CY, Leindecker S, Varner MW, et al.; National Institute of Child Health and Human Development Maternal-Fetal Medicine Units Network. Maternal and perinatal outcomes associated with a trial of labor after prior cesarean delivery. N Engl J Med 2004;351:2581–9.
28. Akaba GO, Onafowokan O, Offiong RA, Omonua K, Ekele BA. Uterine rupture: trends and feto-maternal outcome in a Nigerian teaching hospital. Niger J Med 2013;22:304–8.
29. Royal College of Obstetricians and Gynaecologists. Placenta Praevia, Placenta Praevia Accreta and Vasa Praevia: Diagnosis and Management. Green-top Guideline No. 27. London: RCOG; 2011.
30. Silver RM, Landon MB, Rouse DJ, Leveno KJ, Spong CY, Thom EA, et al.; National Institute of Child Health and Human Development Maternal-Fetal Medicine Units Network. Maternal morbidity associated with multiple repeat cesarean deliveries. Obstet Gynecol 2006;107:1226–32.
31. Kamara M, Henderson JJ, Doherty DA, Dickinson JE, Pennell CE. The risk of placenta accreta following primary elective caesarean delivery: a case-control study. BJOG 2013;120:879–86.
32. O'Neill SM, Kearney PM, Kenny LC, Khashan AS, Henriksen TB, Lutomski JE, et al. Caesarean delivery and subsequent stillbirth or miscarriage: systematic review and meta-analysis. PLoS One 2013;8: e54588.
33. Wood S, Ross S, Sauve R. Cesarean Section and Subsequent Stillbirth, Is Confounding by Indication Responsible for the Apparent Association? An Updated Cohort Analysis of a Large Perinatal Database. PLoS One 2015;10:e0136272.
34. Vendittelli F, Pons JC, Lemery D, Mamelle N; Obstetricians of the AUDIPOG Sentinel Network. The term breech presentation: Neonatal results and obstetric practices in France. Eur J Obstet Gynecol Reprod Biol 2006;125:176–84.
35. Azria E, Le Meaux JP, Khoshnood B, Alexander S, Subtil D, Goffinet F; PREMODA Study Group. Factors associated with adverse perinatal outcomes for term breech fetuses with planned vaginal delivery. Am J Obstet Gynecol 2012;207:285.e1–9.
36. Molkenboer JF, Roumen FJ, Smits LJ, Nijhuis JG. Birth weight and neurodevelopmental outcome of children at 2 years of age after planned vaginal delivery for breech presentation at term. Am J Obstet Gynecol 2006;194:624–9.
37. van Loon AJ, Mantingh A, Serlier EK, Kroon G, Mooyaart EL, Huisjes HJ. Randomised controlled trial of magnetic-resonance pelvimetry in breech presentation at term. Lancet 1997;350:1799– 804.
38. Kessler J, Moster D, Albrechtsen S. Intrapartum monitoring with cardiotocography and ST-waveform analysis in breech presentation: an observational study. BJOG 2015;122:528–35.
39. Hemelaar J, Lim LN, Impey LW. The Impact of an ECV Service is Limited by Antenatal Breech Detection: A Retrospective Cohort Study. Birth 2015;42:165–72.
40. Evans J. Understanding physiological breech birth. Essentially MIDIRS 2012;3:17–21.
41. Hodnett ED, Gates S, Hofmeyr GJ, Sakala C. Continuous support for women during childbirth. Cochrane Database Syst Rev 2013;(7): CD003766.
42. Jones L, Othman M, Dowswell T, Alfirevic Z, Gates S, Newburn M, et al. Pain management for women in labour: an overview of systematic reviews. Cochrane Database Syst Rev 2012;(3):CD009234.
43. Michel S, Drain A, Closset E, Deruelle P, Ego A, Subtil D; Lille Breech Study Group. Evaluation of a decision protocol for type of delivery of infants in breech presentation at term. Eur J Obstet Gynecol Reprod Biol 2011;158:194–8.
44. Hofmeyr GJ, Kulier R. Expedited versus conservative approaches for vaginal delivery in breech presentation. Cochrane Database Syst Rev 2012;(6):CD000082.
45. Bogner G, Strobl M, Schausberger C, Fischer T, Reisenberger K, Jacobs VR. Breech delivery in the all fours position: a prospective observational comparative study with classic assistance. J Perinat Med 2015;43:707–13.
46. Gupta JK, Nikodem VC. Woman's position in the second stage of labour. Cochrane Database Syst Rev 2000;(2):CD002006.
47. Reitter A, Daviss BA, Bisits A, Schollenberger A, Vogl T, Herrmann E, et al. Does pregnancy and/or shifting positions create more room in a woman's pelvis? Am J Obstet Gynecol 2014;211:662.e1–9.
48. Penn ZJ, Steer PJ, Grant A. A multicentre randomised controlled trial comparing elective and selective caesarean section for the delivery of the preterm breech infant. BJOG 2014;121(Suppl 7):48–53.
49. Alfirevic Z, Milan SJ, Livio S. Caesarean section versus vaginal delivery for preterm birth in singletons. Cochrane Database Syst Rev 2013;(9):CD000078.
50. Bergenhenegouwen LA, Meertens LJ, Schaaf J, Nijhuis JG, Mol BW, Kok M, et al. Vaginal delivery versus caesarean section in preterm breech delivery: a systematic review. Eur J Obstet Gynecol Reprod Biol 2014;172:1–6.
51. Herbst A, K€allen K. Influence of mode of delivery on neonatal mortality and morbidity in spontaneous preterm breech delivery. Eur J Obstet Gynecol Reprod Biol 2007;133:25–9.
52. Muhuri PK, Macdorman MF, Menacker F. Method of delivery and neonatal mortality among very low birth weight infants in the United States. Matern Child Health J 2006;10:47–53.
53. Demirci O, Tugrul AS, Turgut A, Ceylan S, Eren S. Pregnancy outcomes by mode of delivery among breech births. Arch Gynecol Obstet 2012;285:297–303.
54. Robilio PA, Boe NM, Danielsen B, Gilbert WM. Vaginal vs. cesarean delivery for preterm breech presentation of singleton infants in California: a population-based study. J Reprod Med 2007;52:473–9.
55. Deutsch A, Salihu HM, Lynch O, Marty PJ, Belogolovkin V. Cesarean delivery versus vaginal delivery: impact on survival and morbidity for the breech fetus at the threshold of viability. J Matern Fetal Neonatal Med 2011;24:713–7.

56. Azria E, Kayem G, Langer B, Marchand-Martin L, Marret S, Fresson J, et al.; EPIPAGE study group. Neonatal Mortality and Long-Term Outcome of Infants Born between 27 and 32 Weeks of Gestational Age in Breech Presentation: The EPIPAGE Cohort Study. PLoS One 2016;11:e0145768.
57. Moutquin JM. Classification and heterogeneity of preterm birth. BJOG 2003;110(Suppl 20):30–3.
58. Bowes WA Jr, Taylor ES, O'Brien M, Bowes C. Breech delivery: evaluation of the method of delivery on perinatal results and maternal morbidity. Am J Obstet Gynecol 1979;135: 965–73.
59. Gravenhorst JB, Schreuder AM, Veen S, Brand R, Verloove-Vanhorick SP, Verweij RA, et al. Breech delivery in very preterm and very low birthweight infants in The Netherlands. Br J Obstet Gynaecol 1993;100:411–5.
60. Cibils LA, Karrison T, Brown L. Factors influencing neonatal outcomes in the very-low-birth-weight fetus (< 1500 grams) with a breech presentation. Am J Obstet Gynecol 1994;171: 35–42.
61. Biswas A, Su LL, Mattar C. Caesarean section for preterm birth and, breech presentation and twin pregnancies. Best Pract Res Clin Obstet Gynaecol 2013;27:209–19.
62. Keirse MJ. Commentary: the freezing aftermath of a hot randomized controlled trial. Birth 2011;38:165–7.
63. Kayem G, Baumann R, Goffinet F, El Abiad S, Ville Y, Cabrol D, et al. Early preterm breech delivery: is a policy of planned vaginal delivery associated with increased risk of neonatal death? Am J Obstet Gynecol 2008;198:289.e1–6.
64. Robertson PA, Foran CM, Croughan-Minihane MS, Kilpatrick SJ. Head entrapment and neonatal outcome by mode of delivery in breech deliveries from 28 to 36 weeks of gestation. Am J Obstet Gynecol 1996;174:1742–7; discussion 1747–9.
65. National Institute for Health and Clinical Excellence. Multiple pregnancy: antenatal care for twin and triplet pregnancies. NICE clinical guideline 129. Manchester: NICE; 2011.
66. Hogle KL, Hutton EK, McBrien KA, Barrett JF, Hannah ME. Cesarean delivery for twins: a systematic review and meta-analysis. Am J Obstet Gynecol 2003;188:220–7.
67. Oettinger M, Ophir E, Markovitz J, Stolero E, Odeh M. Is caesarean section necessary for delivery of a breech first twin? Gynecol Obstet Invest 1993;35:38–43.
68. Sentilhes L, Goffinet F, Talbot A, Diguet A, Verspyck E, Cabrol D, et al. Attempted vaginal versus planned cesarean delivery in 195 breech first twin pregnancies. Acta Obstet Gynecol Scand 2007;86:55–60.
69. Steins Bisschop CN, Vogelvang TE, May AM, Schuitemaker NW. Mode of delivery in non-cephalic presenting twins: a systematic review. Arch Gynecol Obstet 2012;286:237–47.
70. Cohen M, Kohl SG, Rosenthal AH. Fetal interlocking complicating twin gestation. Am J Obstet Gynecol 1965;91:407–12.
71. Barrett JF, Hannah ME, Hutton EK, Willan AR, Allen AC, Armson BA, et al.; Twin Birth Study Collaborative Group. A randomized trial of planned cesarean or vaginal delivery for twin pregnancy. N Engl J Med 2013;369:1295–305.
72. Rabinovici J, Barkai G, Reichman B, Serr DM, Mashiach S. Randomized management of the second nonvertex twin: vaginal delivery or caesarean section. Am J Obstet Gynecol 1987;156:52–6.
73. Ginsberg NA, Levine EM. Delivery of the second twin. Int J Gynaecol Obstet 2005;91:217–20.
74. Yang Q, Wen SW, Chen Y, Krewski D, Fung Kee Fung K, Walker M. Neonatal death and morbidity in vertex-nonvertex second twins according to mode of delivery and birth weight. Am J Obstet Gynecol 2005;192:840–7.
75. Sibony O, Touitou S, Luton D, Oury JF, Blot P. Modes of delivery of first and second twins as a function of their presentation. Study of 614 consecutive patients from 1992 to 2000. Eur J Obstet Gynecol Reprod Biol 2006;126:180–5.
76. Caukwell S, Murphy DJ. The effect of mode of delivery and gestational age on neonatal outcome of the non-cephalic-presenting second twin. Am J Obstet Gynecol 2002;187:1356–61.

Appendix I: Explanation of guidelines and evidence levels

Clinical guidelines are: 'systematically developed statements which assist clinicians and patients in making decisions about appropriate treatment for specific conditions'. Each guideline is systematically developed using a standardised methodology. Exact details of this process can be found in Clinical Governance Advice No.1 Development of RCOG Green-top Guidelines (available on the RCOG website at http://www.rcog.org.uk/green-top-development). These recommendations are not intended to dictate an exclusive course of management or treatment. They must be evaluated with reference to individual patient needs, resources and limitations unique to the institution and variations in local populations. It is hoped that this process of local ownership will help to incorporate these guidelines into routine practice. Attention is drawn to areas of clinical uncertainty where further research may be indicated.

The evidence used in this guideline was graded using the scheme below and the recommendations formulated in a similar fashion with a standardised grading scheme.

Classification of evidence levels

1++	High-quality meta-analyses, systematic reviews of randomised controlled trials or randomised controlled trials with a very low risk of bias
1+	Well-conducted meta-analyses, systematic reviews of randomised controlled trials or randomised controlled trials with a low risk of bias
1–	Meta-analyses, systematic reviews of randomised controlled trials or randomised controlled trials with a high risk of bias
2++	High-quality systematic reviews of case–control or cohort studies or high-quality case–control or cohort studies with a very low risk of confounding, bias or chance and a high probability that the relationship is causal
2+	Well-conducted case–control or cohort studies with a low risk of confounding, bias or chance and a moderate probability that the relationship is causal
2–	Case–control or cohort studies with a high risk of confounding, bias or chance and a significant risk that the relationship is not causal
3	Non-analytical studies, e.g. case reports, case series
4	Expert opinion

Grades of recommendations

A	At least one meta-analysis, systematic reviews or RCT rated as 1++, and directly applicable to the target population; or A systematic review of RCTs or a body of evidence consisting principally of studies rated as 1+, directly applicable to the target population and demonstrating overall consistency of results
B	A body of evidence including studies rated as 2++ directly applicable to the target population, and demonstrating overall consistency of results; or Extrapolated evidence from studies rated as 1++ or 1+
C	A body of evidence including studies rated as 2+ directly applicable to the target population, and demonstrating overall consistency of results; or Extrapolated evidence from studies rated as 2++
D	Evidence level 3 or 4; or Extrapolated evidence from studies rated as 2+

Good practice point

☐ Recommended best practice based on the clinical experience of the guideline development group

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The final version is the responsibility of the Guidelines Committee of the RCOG.

The review process will commence in 2020, unless otherwise indicated.

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External Cephalic Version and Reducing the Incidence of Term Breech Presentation

Green-top Guideline No. 20a

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External Cephalic Version and Reducing the Incidence of Term Breech Presentation

This is the second edition of this guideline originally published in 2006.

Executive summary of recommendations

External cephalic version (ECV)

How effective is ECV in preventing noncephalic birth?

Women should be informed that the success rate of ECV is approximately 50%. **A**

Women should be informed that after an unsuccessful ECV attempt at 36^{+0} weeks of gestation or later, only a few babies presenting by the breech will spontaneously turn to cephalic presentation. [New 2017] **B**

Women should be informed that few babies revert to breech after successful ECV. [New 2017] **B**

Women should be informed that a successful ECV reduces the chance of caesarean section. **A**

Does ECV affect the outcome of labour?

Women should be informed that labour after ECV is associated with a slightly increased rate of caesarean section and instrumental delivery when compared with spontaneous cephalic presentation. **B**

Can the success of an ECV attempt be predicted?

ECV success can be predicted to some extent, but the use of models to predict success should not be used routinely to determine whether ECV can be attempted. [New 2017] **B**

What methods can be used to improve the success rate of ECV?

Use of tocolysis with betamimetics improves the success rates of ECV. **A**

Routine use of regional analgesia or neuraxial blockade is not recommended, but may be considered for a repeat attempt or for women unable to tolerate ECV without analgesia. [New 2017] **B**

When should ECV be offered?

ECV should be offered at term from 37^{+0} weeks of gestation. **B**

In nulliparous women, ECV may be offered from 36^{+0} weeks of gestation.

What are the contraindications to ECV?

There is no general consensus on the eligibility for, or contraindications to, ECV. **C**

Women should be informed that ECV after one caesarean delivery appears to have no greater risk than with an unscarred uterus. [New 2017] **C**

What are the risks of ECV?

Women should be counselled that with appropriate precautions, ECV has a very low complication rate. **B**

What measures are appropriate to ensure fetal safety?

ECV should be performed where facilities for monitoring and surgical delivery are available.

The standard preoperative preparations for caesarean section are not recommended for women undergoing ECV.

Following ECV, EFM is recommended.

Women undergoing ECV who are D negative should undergo testing for fetomaternal haemorrhage and be offered anti-D. [New 2017] **D**

Who should perform ECV?

ECV should only be performed by a trained practitioner or by a trainee working under direct supervision. [New 2017]

How acceptable is ECV to women?

Although most women tolerate ECV, they should be informed that ECV can be a painful procedure. **C**

How could the uptake of ECV be increased?

The uptake of ECV is best increased by timely identification of the baby presenting by the breech and provision of evidence-based information. **C**

How can an ECV service be developed and audited?

There is no evidence to support any particular service model although larger institutions may consider a dedicated ECV clinic. [New 2017]

What is the role of non-ECV methods?

Women may wish to consider the use of moxibustion for breech presentation at 33–35 weeks of gestation, under the guidance of a trained practitioner. [New 2017] C

Women should be advised that there is no evidence that postural management alone promotes spontaneous version to cephalic presentation. B

1. Purpose and scope

External cephalic version (ECV) is the manipulation of the fetus, through the maternal abdomen, to a cephalic presentation. The purpose of this guideline is to describe and summarise the best evidence concerning methods to prevent noncephalic presentation at delivery and therefore, caesarean section and its sequelae. The evidence concerning mode and technique of the delivery of breech presentation is summarised in the Royal College of Obstetricians and Gynaecologists (RCOG) Green-top Guideline No. 20b Management of Breech Presentation.[1]

2. Introduction and background epidemiology

Breech presentation complicates 3–4% of term deliveries and is more common in nulliparous women and in preterm deliveries. Following the publication of the Term Breech Trial,[2] there was a significant decrease in the number of women undergoing vaginal breech birth.[3] In many countries, including the UK, planned vaginal breech birth remains rare and attempts to prevent breech presentation at delivery remain important.

3. Identification and assessment of evidence

This guideline was developed using standard methodology for developing RCOG Green-top Guidelines. The Cochrane Library (including the Cochrane Database of Systematic Reviews, the Database of Abstracts of Reviews of Effects [DARE] and the Cochrane Central Register of Controlled Trials [CENTRAL]), EMBASE, MEDLINE and Trip were searched for relevant papers. The search was inclusive of all relevant articles published between August 2005 and April 2016. The databases were searched using the relevant Medical Subject Headings (MeSH) terms, including all subheadings and synonyms, and this was combined with a keyword search. Search terms included 'breech', 'breech near presentation', 'breech presentation', 'breech near delivery', 'breech delivery', 'breech presentation and delivery', 'breech near extraction', 'breech extraction', 'Mauriceau-Smellie-Veit', 'Burns-Marshall', 'after-coming head' and 'external cephalic version'. The search was limited to studies on humans and papers in the English language. Relevant guidelines were also searched for using the same criteria in the National Guideline Clearinghouse and the National Institute for Health and Care Excellence (NICE) Evidence Search.

Where possible, recommendations are based on available evidence. Areas lacking evidence are highlighted and annotated as 'good practice points'. Further information about the assessment of evidence and the grading of recommendations may be found in Appendix I.

4. External cephalic version (ECV)

4.1 How effective is ECV in preventing noncephalic birth?

Women should be informed that the success rate of ECV is approximately 50%. **A**

Women should be informed that after an unsuccessful ECV attempt at 36^{+0} weeks of gestation or later, only a few babies presenting by the breech will spontaneously turn to cephalic presentation. **B**

Women should be informed that few babies revert to breech after successful ECV. **B**

Women should be informed that a successful ECV reduces the chance of caesarean section. **A**

A systematic review of eight trials including 1308 women demonstrated that ECV at term reduces noncephalic presentation at delivery (RR 0.42, 95% CI 0.29–0.61).[4] Evidence level 1++

Success rates of ECV vary, but in a large series, 47% of women following an ECV attempt had a cephalic presentation at birth.[5] Overall success levels are greater for multiparous women (60%) than for nulliparous women (40%).[6]

Spontaneous version from breech to cephalic is unusual at term[7] and occurs in only 8% of primigravid women after 36 weeks of gestation.[8] Where ECV at term has been unsuccessful, two large series[9,10] demonstrated that only 3–7% of babies will spontaneously turn to cephalic presentation. Spontaneous reversion to breech after a successful ECV is rare, occurring in only 3% in the largest of the series that assessed this.[10] Evidence level 2+

A systematic review demonstrated that attempting ECV at term reduces the chance of caesarean section (RR 0.57, 95% CI 0.40–0.82).[4] Evidence level 1++

4.2 Does ECV affect the outcome of labour?

Women should be informed that labour after ECV is associated with a slightly increased rate of caesarean section and instrumental delivery when compared with spontaneous cephalic presentation. **B**

In a systematic review of three cohort and eight case–control studies, de Hundt et al.[11] concluded that even after successful ECV, women remained at increased risk of caesarean delivery (when compared with babies that have been cephalic) for both obstructed labour (OR 2.2, 95% CI 1.6–3.0) and fetal distress (OR 2.2, 95% CI 1.6–2.9). There is also an increased risk of instrumental vaginal delivery (OR 1.4, 95% CI 1.1–1.7). The risk of caesarean delivery may be greater with a shorter ECV to labour interval.[12] Evidence level 2++

4.3 Can the success of an ECV attempt be predicted?

ECV success can be predicted to some extent, but the use of models to predict success should not be used routinely to determine whether ECV can be attempted. **B**

Success rates depend on multiple variables. It is likely that case selection considerably affects success rates.

In a meta-analysis, Kok et al.[13] showed that multiparity (OR 2.5, 95% CI 2.3–2.8), nonengagement of the breech (OR 9.4, 95% CI 6.3–14), use of tocolysis (OR 18, 95% CI 12–29), a palpable fetal head (OR 6.3, 95% CI 4.3–9.2) and a maternal weight of less than 65 kg (OR 1.8, 95% CI 1.2–2.6) were predictors for successful ECV. Other factors, such as posterior placental location (OR 1.9, 95% CI 1.5–2.4), complete breech position (OR 2.3, 95% CI 1.9–2.8) and an amniotic fluid index greater than 10 (OR 1.8, 95% CI 1.5–2.1), are also predictors for successful ECV.[14] There are limited data to suggest that estimated fetal weight affects success rates. Evidence level 2++

Models have been developed[15,16] to predict ECV success; different strategies are summarised by Leung and Lau.[17] These models are of insufficient predictive value to alter practice and, given the benefits and safety of ECV, a low probability of success should not prevent an attempt. Evidence level 2+

4.4 What methods can be used to improve the success rate of ECV?

Use of tocolysis with betamimetics improves the success rates of ECV. **A**

Routine use of regional analgesia or neuraxial blockade is not recommended, but may be considered for a repeat attempt or for women unable to tolerate ECV without analgesia. **B**

A 2015 Cochrane review[18] concluded that betamimetics are the best evaluated of all tocolytics, and increased cephalic presentation in labour (RR 1.68, 95% CI 1.14–2.48) and reduced the number of caesarean sections (RR 0.77, 95% CI 0.67–0.88). The effect applied to both multiparous and nulliparous women.

There is inadequate information comparing different betamimetic drugs on the success rates of ECV. Wilcox et al.,[19] in a systematic review of three studies (n = 176), found no evidence to support the use of nifedipine as a tocolytic. There are insufficient data to support the use of nifedipine or atosiban compared with betamimetics.[18] In a randomised controlled trial of 59 women, intravenous glyceryl trinitrate was inferior to subcutaneous terbutaline for tocolysis.[20] Evidence level 1

Betamimetic drugs may be administered routinely, reserved for where the uterus is tense or for where a previous attempt without tocolysis has been unsuccessful. A significant reduction in the incidence of caesarean (RR 0.33, 95% CI 0.14–0.80) has been demonstrated with the administration of betamimetic drugs where a previous attempt without tocolysis has been unsuccessful.[21] Evidence level 1+

A pragmatic regimen consists of 250 micrograms of salbutamol in 25 ml of normal saline (10 micrograms/ml) by slow intravenous injection, or 250 micrograms of terbutaline subcutaneously.

Betamimetics should not be used in women with significant cardiac disease or hypertension, and will not be effective in those taking beta-blockers. Maternal palpitations,[20] tachycardia, flushing, tremor and occasional nausea may be experienced.

Evidence level 3

Regional anaesthesia requires less force[22] and may reduce failure rates,[23–25] particularly in conjunction with tocolysis (RR 0.61, 95% CI 0.43–0.86).[18] The effect of regional anaesthesia on caesarean section rates, however, is less clear.[26] Nevertheless, previous studies of neuraxial block report wide variations in technique and sensory block targets;[27] anaesthetic doses might be more effective than analgesic doses. There is no evidence that complication rates of ECV are higher when regional anaesthesia has been used.[25] Regional blockade for ECV should not be used routinely, but may be considered for women unable to tolerate the procedure. Some women might be helped by the use of clinical hypnosis prior to ECV.[28]

Evidence level 2+

4.5 When should ECV be offered?

ECV should be offered at term from 37^{+0} weeks of gestation.

B

In nulliparous women, ECV may be offered from 36^{+0} weeks of gestation.

Gestation (at term) does not appear to affect success rates.[13] There is no upper gestation limit for when ECV can be offered, but contraindications may be more common.

Evidence level 2+

Hutton et al.,[29] using ECV at 34–35^{+6} weeks of gestation compared with 37 weeks of gestation or after, found a reduced rate of noncephalic presentation at birth (RR 0.81, 95% CI 0.74–0.90), but no significant effect on caesarean section rates (RR 0.92, 95% CI 0.85–1.00). A systematic review, however, confirmed a significant increase in preterm births (RR 1.51, 95% CI 1.03–2.21).[30] There is no clear benefit to ECV prior to 36 weeks of gestation.

Evidence level 1+

In nulliparous women who have a low chance of spontaneous version, ECV from 36^{+0} weeks of gestation seems pragmatic; spontaneous version in multiparous women is more common.[7]

Evidence level 2+

There is a paucity of data on intrapartum ECV, but success has been reported.[31,32] Intrapartum ECV may be considered if informed consent is possible, providing the membranes are intact and no contraindications exist (see section 4.6).

Evidence level 3

With an unstable lie, ECV is reasonable in the course of a stabilising induction. There are limited data on this procedure, but potential risks include cord prolapse, transverse lie in labour and fetal heart rate abnormalities. ECV should only be performed if there is a valid indication for induction.

4.6 What are the contraindications to ECV?

There is no general consensus on the eligibility for, or contraindications to, ECV.

C

Women should be informed that ECV after one caesarean delivery appears to have no greater risk than with an unscarred uterus.

C

There is limited evidence concerning contraindications for ECV. Only placental abruption, severe pre-eclampsia, and abnormal fetal Doppler or cardiotocography (CTG) are supported by any evidence.[33]

ECV is contraindicated where an absolute reason for caesarean section already exists (e.g. placenta praevia major). It is generally considered to be contraindicated in a multiple pregnancy (except after delivery of a first twin), where there is rhesus isoimmunisation, current or recent (less than 1 week) vaginal bleeding, abnormal electronic fetal monitoring (EFM), rupture of the membranes, or where the mother declines or is unable to give informed consent. ECV should be performed with additional caution where there is oligohydramnios or hypertension.[33]

Evidence level 4

The role of ECV with a previous caesarean section has been controversial. The largest analysis compared 70 ECVs performed in women with previous caesarean section with 387 ECVs performed in other multiparous women[34] and concluded that ECV is safe and successful in women with one previous caesarean delivery as with other multiparous women. In this series, and in another prospective series, no complications and no cases of uterine rupture were reported in the previous caesarean section cohort.[10] There are insufficient numbers to determine the low risk of uterine rupture.

Evidence level 2+

4.7 What are the risks of ECV?

Women should be counselled that with appropriate precautions, ECV has a very low complication rate.

B

Although case reports of placental abruption and large fetomaternal haemorrhage exist, complications associated with ECV are very rare. In a 2015 Cochrane systematic review, Hofmeyr et al.[4] reported no significant differences in Apgar scores of less than 7 at 1 minute and 5 minutes, or in low umbilical vein pH levels, neonatal admission or perinatal death according to whether ECV had been performed. A number of large consecutive series[5,6,9,10,35] have reported no fetal deaths attributable to the procedure. Meta-analyses and systematic reviews[36–38] although subject to reporting bias, also show complications to be rare.

The reported risk of emergency caesarean section within 24 hours is approximately 0.5%, with the indication in over 90% being vaginal bleeding or an abnormal CTG following the procedure.[6,10]

Evidence level 2++

However, a population-based cohort study[39] comparing breech births where there had been unsuccessful ECV with those where ECV had not been attempted showed a small increase in short-term adverse outcomes (adjusted OR for neonatal unit admission 1.48, 95% CI 1.20–1.82) after an unsuccessful attempt at ECV. This was irrespective of whether labour was attempted. Longer term outcomes were not analysed and comparison with successful ECVs was not performed.

Boucher et al.[40] performed Kleihauer testing shortly after an ECV attempt. In 1244 women with a negative Kleihauer test prior to ECV, fetomaternal haemorrhage was detected in 2.4% of women, a third of which had more than 1 ml. In one woman, the estimated fetomaternal haemorrhage was more than 30 ml.

Evidence level 2+

4.8 What measures are appropriate to ensure fetal safety?

ECV should be performed where facilities for monitoring and surgical delivery are available.

The standard preoperative preparations for caesarean section are not recommended for women undergoing ECV.

Following ECV, EFM is recommended.

Women undergoing ECV who are D negative should undergo testing for fetomaternal haemorrhage and be offered anti-D. **D**

There is limited evidence to guide practice. No more than four attempts are advised, for a suggested maximum of 10 minutes overall.[10] EFM prior to the attempt is advised. ECV should be performed where facilities for ultrasound, EFM and surgical delivery are available. However, fasting, administration of anaesthetic premedication or insertion of intravenous access (unless for tocolysis) are not recommended as the need for caesarean delivery is less likely[10] than for women in normal labour.

Evidence level 3

Ultrasound should be used during and after the ECV to confirm a normal fetal heart rate. A transient (less than 3 minutes) fetal bradycardia after ECV is common,[10] but should instigate continuous monitoring in a left lateral position, and if persistent and not improving after 6 minutes, should prompt preparation for category I caesarean section.

Urgent delivery should also be advised following the procedure if there is vaginal bleeding or unexplained abdominal pain, or if an abnormal CTG persists.

Anti-D immunoglobulin is recommended for women undergoing ECV who are D negative unless the baby is known to be D negative also. A minimum of 500 iu is recommended within 72 hours. Routine screening for fetomaternal haemorrhage is recommended by the British Committee for Standards in Haematology[41] to assess which D-negative women might benefit from additional anti-D. A strongly positive (e.g. more than 30 ml) Kleihauer should prompt immediate fetal review.

Evidence level 4

4.9 Who should perform ECV?

ECV should only be performed by a trained practitioner or by a trainee working under direct supervision.

Beuckens et al.[5] trained midwives in the theory and practice of ECV and reported low complication rates among 2546 attempts. The RCOG Advanced Training Skills Module in Advanced Labour Ward Practice Curriculum requires ECV competence among trainees. Training models may help[42] but are not widely available.

Evidence level 4

4.10 How acceptable is ECV to women?

Although most women tolerate ECV, they should be informed that ECV can be a painful procedure. **C**

ECV is not universally acceptable to women. Hemelaar et al.[43] reported that 9% of women declined ECV. Barriers include fear of pain and vaginal birth, and accounts of others' experiences.[44,45]

Maternal experience of ECV varies enormously. Rijnders et al.[46] reported that one-third of women experienced significant pain, while Bogner et al.[47] reported general satisfaction if the ECV was successful. Fok et al.[48] reported median pain scores of 5.7. In one trial,[21] three-quarters of women described the procedure as uncomfortable or worse, and 5% of women reported high pain scores.

Evidence level 2

4.11 How could the uptake of ECV be increased?

The uptake of ECV is best increased by timely identification of the baby presenting by the breech and provision of evidence-based information. **C**

ECV is not practised in many parts of the world.[49] In the UK, the views of obstetricians on ECV are generally positive, but there are some negative perceptions among women.[44] Patient acceptance could improve if accurate information on the benefits and risks are given.[43]

The greatest impediment to the use of ECV is the nonidentification of breech presentation. The proportion of undetected breech presentation at term has been reported in as high as 20.0–32.5% of all breech presentations[43,50] and these have worse outcomes.[51] The possibility of breech presentation should always be considered at clinical examination although abdominal palpation has a sensitivity of only 70%.[52] In the absence of routine third trimester ultrasound, particular care should be taken with high-risk groups, e.g. where a previous baby has been breech. Recurrence rate after one breech presentation is 9.9% (RR adjusted 3.2, 95% CI 2.8–3.6).[53] Access to a presentation scan after 36^{+0} weeks of gestation is essential.

Evidence level 2+

4.12 How can an ECV service be developed and audited?

There is no evidence to support any particular service model although larger institutions may consider a dedicated ECV clinic.

There is minimal evidence concerning how an ECV service is best delivered. This service should be staffed by appropriately trained practitioners. Comprehensive local data collection, including success rates and outcomes, should be gathered in order for women to make an informed choice.

4.13 What is the role of non-ECV methods?

Women may wish to consider the use of moxibustion for breech presentation at 33–35 weeks of gestation, under the guidance of a trained practitioner. **C**

Women should be advised that there is no evidence that postural management alone promotes spontaneous version to cephalic presentation. **B**

Moxibustion, a traditional Chinese medicine therapy using moxa made from dried mugwort, has been used from 32 weeks of gestation to promote spontaneous version. It is unclear how moxibustion might promote version, but it is thought to promote fetal activity. The quality of data is poor and the effectiveness of moxibustion should be considered in light of the number of breech presentations that exist at 32 weeks of gestation, reported as 43% by Westgren et al.[8] Coyle et al.,[54] in a systematic review, concluded that although moxibustion did not reduce the number of noncephalic births when compared with no treatment, it may do so when combined with postural management techniques. In addition, moxibustion, when combined with acupuncture, may result in fewer births by caesarean section.

Evidence level 1

Subsequently, Vas et al.[55] randomised 406 women with a proven breech presentation at 33–35 weeks of gestation to 2 weeks of daily moxibustion, 'sham' moxibustion or usual care. A significant increase in cephalic presentation at delivery was noted in the moxibustion group when compared with the sham or usual care (moxibustion versus usual care; RR 1.29, 95% CI 1.02–1.64) groups, with no significant change in caesarean delivery rates (moxibustion versus usual care; RR 0.85, 95% CI 0.67–1.07). No data on ECV rates in the groups were presented.

There is insufficient evidence to support the use of postural management for breech presentation.[56]

5. Recommendations for future research

Methods to improve the antenatal detection of breech presentation, applicable in a low resource setting. Methods to improve the uptake of ECV.

Methods to improve the success rate of ECV.

6. Auditable topics

Antenatal detection of breech presentation.

Proportion of women with a breech presentation offered ECV in the absence of contraindications (100%). Success rates of ECV (50%).

Complications of/after ECV.

Maternal perceptions/experience of ECV.

2. Useful links and support groups

NHS Choices. Baby positions in the womb. [http://www.nhs.uk/conditions/pregnancy-and-baby/pages/breech-birth. aspx].

Royal College of Midwives. Vaginal or caesarean delivery? How research has turned breech birth around. [https://www.rcm.org.uk/learning-and-career/learning-and-research/ebm-articles/vaginal-or-caesarean-delivery-how-research].

Newcastle University. Breech decisions. [http://research.ncl.ac.uk/breech-decisions/].

NHS choices. Breech births: your choices. [http://www.nhs.uk/Video/Pages/breech-births.aspx].

Royal College of Obstetricians and Gynaecologists. Breech baby at the end of pregnancy. Information for you. London: RCOG; 2008 [https://www.rcog.org.uk/en/patients/patient-leaflets/breech-baby-at-the-end-of-pregnancy/].

Royal College of Obstetricians and Gynaecologists. Turning a breech baby in the womb (external cephalic version). Information for you. [https://www.rcog.org.uk/en/patients/patient-leaflets/turning-a-breech-baby-in-the-womb/].

References

4. Royal College of Obstetricians and Gynaecologists. Management of Breech Presentation. Green-top Guideline No. 20b. London: RCOG; 2017.
5. Hannah ME, Hannah WJ, Hewson SA, Hodnett ED, Saigal S, Willan AR. Planned caesarean section versus planned vaginal birth for breech presentation at term: a randomised multicentre trial. Term Breech Trial Collaborative Group. Lancet 2000;356:1375–83.
6. Rietberg CC, Elferink-Stinkens PM, Visser GH. The effect of the Term Breech Trial on medical intervention behaviour and neonatal outcome in The Netherlands: an analysis of 35,453 term breech infants. BJOG 2005;112:205–9.
7. Hofmeyr GJ, Kulier R, West HM. External cephalic version for breech presentation at term. Cochrane Database Syst Rev 2015;(4): CD000083.
8. Beuckens A, Rijnders M, Verburgt-Doeleman GH, Rijninks-van Driel GC, Thorpe J, Hutton EK. An observational study of the success and complications of 2546 external cephalic versions in low-risk pregnant women performed by trained midwives. BJOG 2015;123:415–23.
9. Tong Leung VK, Suen SS, Singh Sahota D, Lau TK, Yeung Leung T. External cephalic version does not increase the risk of intra-uterine death: a 17-year experience and literature review. J Matern Fetal Neonatal Med 2012;25:1774–8.
5. Ferreira JC, Borowski D, Czuba B, Cnota W, Wloch A, Sodowski K, et al. The evolution of fetal presentation during pregnancy: a retrospective, descriptive cross-sectional study. Acta Obstet Gynecol Scand 2015;94:660–3.
6. Westgren M, Edvall H, Nordstrom€ L, Svalenius E, Ranstam J. Spontaneous cephalic version of breech presentation in the last trimester. Br J Obstet Gynaecol 1985;92:19–22.
7. Ben-Meir A, Elram T, Tsafrir A, Elchalal U, Ezra Y. The incidence of spontaneous version after failed external cephalic version. Am J Obstet Gynecol 2007;196:157.e1–3.
8. Collins S, Ellaway P, Harrington D, Pandit M, Impey LW. The complications of external cephalic version: results from 805 consecutive attempts. BJOG 2007;114:636–8.
9. de Hundt M, Velzel J, de Groot CJ, Mol BW, Kok M. Mode of delivery after successful external cephalic version: a systematic review and meta-analysis. Obstet Gynecol 2014;123: 1327–34.
10. Kabiri D, Elram T, Aboo-Dia M, Elami-Suzin M, Elchalal U, Ezra Y. Timing of delivery after external cephalic version and the risk for cesarean delivery. Obstet Gynecol 2011;118:209–13.
11. Kok M, Cnossen J, Gravendeel L, van der Post J, Opmeer B, Mol BW. Clinical factors to predict the outcome of external cephalic version: a metaanalysis. Am J Obstet Gynecol 2008;199:630.e1–7; discussion e1–5.
12. Kok M, Cnossen J, Gravendeel L, Van Der Post JA, Mol BW. Ultrasound factors to predict the outcome of external cephalic version: a meta-analysis. Ultrasound Obstet Gynecol 2009;33:76–84.
13. Kok M, van der Steeg JW, van der Post JA, Mol BW. Prediction of success of external cephalic version after 36 weeks. Am J Perinatol 2011;28:103–10.
14. Velzel J, de Hundt M, Mulder FM, Molkenboer JF, Van der Post JA, Mol BW, et al. Prediction models for successful external cephalic version: a systematic review. Eur J Obstet Gynecol Reprod Biol 2015;195:160–7.
15. Leung TY, Lau TK. Prediction of outcome of external cephalic version for breech presentation at term. Fetal Matern Med Rev 2005;16:245–62.
6. Cluver C, Gyte GM, Sinclair M, Dowswell T, Hofmeyr GJ. Interventions for helping to turn term breech babies to head first presentation when using external cephalic version. Cochrane Database Syst Rev 2015;(2):CD000184.
7. Wilcox CB, Nassar N, Roberts CL. Effectiveness of nifedipine tocolysis to facilitate external cephalic version: a systematic review. BJOG 2011;118:423–8.
8. El-Sayed YY, Pullen K, Riley ET, Lyell D, Druzin ML, Cohen SE, et al. Randomized comparison of intravenous nitroglycerin and subcutaneous terbutaline for external cephalic version under tocolysis. Am J Obstet Gynecol 2004;191:2051–5.
9. Impey L, Pandit M. Tocolysis for repeat external cephalic version in breech presentation at term: a randomised, double-blinded, placebo-controlled trial. BJOG 2005;112:627–31.
10. Suen SS, Khaw KS, Law LW, Sahota DS, Lee SW, Lau TK, et al. The force applied to successfully turn a foetus during reattempts of external cephalic version is substantially reduced when performed under spinal analgesia. J Matern Fetal Neonatal Med 2012;25:719–22.
11. Weiniger CF, Ginosar Y, Elchalal U, Sela HY, Weissman C, Ezra Y. Randomized controlled trial of external cephalic version in term multiparae with or without spinal analgesia. Br J Anaesth 2010;104:613–8.
12. Khaw KS, Lee SW, Ngan Kee WD, Law LW, Lau TK, Ng FF, et al. Randomized trial of anaesthetic interventions in external cephalic version for breech presentation. Br J Anaesth 2015;114:944–50.
13. Sultan P, Carvalho B. Neuraxial blockade for external cephalic version: a systematic review. Int J Obstet Anesth 2011;20:299–306.
14. Goetzinger KR, Harper LM, Tuuli MG, Macones GA, Colditz GA. Effect of regional anesthesia on the success rate of external cephalic version: a systematic review and meta-analysis. Obstet Gynecol 2011;118:1137–44.
15. Lavoie A, Guay J. Anesthetic dose neuraxial blockade increases the success rate of external fetal version: a meta-analysis. Can J Anaesth 2010;57:408–14.
16. Reinhard J, Heinrich TM, Reitter A, Herrmann E, Smart W, Louwen F. Clinical hypnosis before external cephalic version. Am J Clin Hypn 2012;55:184–92.
17. Hutton EK, Hannah ME, Ross SJ, Delisle MF, Carson GD, Windrim R, et al.; Early ECV2 Trial Collaborative Group. The Early External Cephalic Version (ECV) 2 Trial: an international multicentre randomised controlled trial of timing of ECV for breech pregnancies. BJOG 2011;118:564–77.
18. Hutton EK, Hofmeyr GJ, Dowswell T. External cephalic version for breech presentation before term. Cochrane Database Syst Rev 2015;(7):CD000084.
19. Ferguson JE 2nd, Dyson DC. Intrapartum external cephalic version. Am J Obstet Gynecol 1985;152:297–8.
20. Kaneti H, Rosen D, Markov S, Beyth Y, Fejgin MD. Intrapartum external cephalic version of footling-breech presentation. Acta Obstet Gynecol Scand 2000;79:1083–5.
21. Rosman AN, Guijt A, Vlemmix F, Rijnders M, Mol BW, Kok M. Contraindications for external cephalic version in breech position at term: a systematic review. Acta Obstet Gynecol Scand 2013;92:137–42.
22. Burgos J, Cobos P, Rodrıguez L, Osuna C, Centeno MM, Martınez-Astorquiza T, et al. Is external cephalic version at term contraindicated in previous caesarean section? A prospective comparative cohort study BJOG 2014;121:230–5; discussion 235.

Rijnders M, Herschderfer K, Prins M, van Baaren R, van Veelen AJ, Schonbeck€ Y, et al. A retrospective study of the success, safety and effectiveness of external cephalic version without tocolysis in a specialised midwifery centre in the Netherlands. Midwifery 2008;24:38–45.

Grootscholten K, Kok M, Oei SG, Mol BW, van der Post JA. External cephalic version-related risks: a meta-analysis. Obstet Gynecol 2008;112:1143–51.

Nassar N, Roberts CL, Barratt A, Bell JC, Olive EC, Peat B. Systematic review of adverse outcomes of external cephalic version and persisting breech presentation at term. Paediatr Perinat Epidemiol 2006;20:163–71.

Collaris RJ, Oei SG. External cephalic version: a safe procedure? A systematic review of version-related risks. Acta Obstet Gynecol Scand 2004;83:511–8.

Balayla J, Dahdouh EM, Villeneuve S, Boucher M, Gauthier RJ, Audibert F, et al. Obstetrical and neonatal outcomes following unsuccessful external cephalic version: a stratified analysis amongst failures, successes, and controls. J Matern Fetal Neonatal Med 2015;28:605–10.

Boucher M, Marquette GP, Varin J, Champagne J, Bujold E. Fetomaternal hemorrhage during external cephalic version. Obstet Gynecol 2008;112:79–84.

Qureshi H, Massey E, Kirwan D, Davies T, Robson S, White J, et al.; British Society for Haematology. BCSH guideline for the use of anti-D immunoglobulin for the prevention of haemolytic disease of the fetus and newborn. Transfus Med 2014;24:8–20.

Burr R, Helyer P, Robson SC. A training model for external cephalic version. Eur J Obstet Gynecol Reprod Biol 2001;99:199– 200.

Hemelaar J, Lim LN, Impey LW. The impact of an ECV service is limited by antenatal breech detection: a retrospective cohort study. Birth 2015;42:165–72.

Say R, Thomson R, Robson S, Exley C. A qualitative interview study exploring pregnant women's and health professionals' attitudes to external cephalic version. BMC Pregnancy Childbirth 2013;13:4.

Rosman AN, Vlemmix F, Fleuren MA, Rijnders ME, Beuckens A, Opmeer BC, et al. Patients' and professionals' barriers and facilitators to external cephalic version for breech presentation at term, a qualitative analysis in the Netherlands. Midwifery 2014;30:324–30.

7. Rijnders M, Offerhaus P, van Dommelen P, Wiegers T, Buitendijk S. Prevalence, outcome, and women's experiences of external cephalic version in a low-risk population. Birth 2010;37:124–33.
8. Bogner G, Hammer BE, Schausberger C, Fischer T, Reisenberger K, Jacobs V. Patient satisfaction with childbirth after external cephalic version. Arch Gynecol Obstet 2014;289:523–31.
9. Fok WY, Chan LW, Leung TY, Lau TK. Maternal experience of pain during external cephalic version at term. Acta Obstet Gynecol Scand 2005;84:748–51.
10. Mukaindo AM, Wanyonyi SZ, Stones WR. External cephalic version in East, Central, and Southern Africa. Int J Gynaecol Obstet 2012;116:228–31.
11. Nassar N, Roberts CL, Cameron CA, Peat B. Outcomes of external cephalic version and breech presentation at term, an audit of deliveries at a Sydney tertiary obstetric hospital, 1997-2004. Acta Obstet Gynecol Scand 2006;85:1231–8.
12. Su M, McLeod L, Ross S, Willan A, Hannah WJ, Hutton E, et al.; Term Breech Trial Collaborative Group Factors associated with adverse perinatal outcome in the Term Breech Trial. Am J Obstet Gynecol 2003;189:740–5.
13. Nassar N, Roberts CL, Cameron CA, Olive EC. Diagnostic accuracy of clinical examination for detection of non-cephalic presentation in late pregnancy: cross sectional analytic study. BMJ 2006;333:578–80.
14. Ford JB, Roberts CL, Nassar N, Giles W, Morris JM. Recurrence of breech presentation in consecutive pregnancies. BJOG 2010;117:830–6.
15. Coyle ME, Smith CA, Peat B. Cephalic version by moxibustion for breech presentation. Cochrane Database Syst Rev 2012;(5): CD003928.
16. Vas J, Aranda-Regules JM, Modesto M, Ramos-Monserrat M, Baron M, Aguilar I, et al. Using moxibustion in primary healthcare to correct non-vertex presentation: a multicentre randomised controlled trial. Acupunct Med 2013;31:31–8.
17. Hofmeyr GJ, Kulier R. Cephalic version by postural management for breech presentation. Cochrane Database Syst Rev 2012;(10): CD000051.

Appendix I: Explanation of guidelines and evidence levels

Clinical guidelines are: 'systematically developed statements which assist clinicians and patients in making decisions about appropriate treatment for specific conditions'. Each guideline is systematically developed using a standardised methodology. Exact details of this process can be found in Clinical Governance Advice No.1 Development of RCOG Green-top Guidelines (available on the RCOG website at http://www.rcog.org.uk/green-top-development). These recommendations are not intended to dictate an exclusive course of management or treatment. They must be evaluated with reference to individual patient needs, resources and limitations unique to the institution and variations in local populations. It is hoped that this process of local ownership will help to incorporate these guidelines into routine practice. Attention is drawn to areas of clinical uncertainty where further research may be indicated.

The evidence used in this guideline was graded using the scheme below and the recommendations formulated in a similar fashion with a standardised grading scheme.

Classification of evidence levels

1++ High-quality meta-analyses, systematic reviews of randomised controlled trials or randomised controlled trials with a very low risk of bias

1+ Well-conducted meta-analyses, systematic reviews of randomised controlled trials or randomised controlled trials with a low risk of bias

1– Meta-analyses, systematic reviews of randomised controlled trials or randomised controlled trials with a high risk of bias

2++ High-quality systematic reviews of case–control or cohort studies or high-quality case–control or cohort studies with a very low risk of confounding, bias or chance and a high probability that the relationship is causal

2+ Well-conducted case–control or cohort studies with a low risk of confounding, bias or chance and a moderate probability that the relationship is causal

2– Case–control or cohort studies with a high risk of confounding, bias or chance and a significant risk that the relationship is not causal

9. Non-analytical studies, e.g. case reports, case series

10. Expert opinion

Grades of recommendations

A At least one meta-analysis, systematic reviews or RCT rated as 1++, and directly applicable to the target population; or
A systematic review of RCTs or a body of evidence consisting principally of studies rated as 1+, directly applicable to the target population and demonstrating overall consistency of results

B A body of evidence including studies rated as 2++ directly applicable to the target population, and demonstrating overall consistency of results; or
Extrapolated evidence from studies rated as 1++ or 1+

C A body of evidence including studies rated as 2+ directly applicable to the target population, and demonstrating overall consistency of results; or
Extrapolated evidence from studies rated as 2++

D Evidence level 3 or 4; or
Extrapolated evidence from studies rated as 2+

Good practice point

☐ Recommended best practice based on the clinical experience of the guideline development group

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All RCOG guidance developers are asked to declare any conflicts of interest. A statement summarising any conflicts of interest for this guideline is available from: https://www.rcog.org.uk/en/guidelines-research-services/guidelines/gtg20a/

The final version is the responsibility of the Guidelines Committee of the RCOG.

The review process will commence in 2020, unless otherwise indicated.

RCOG Guideline No. 20a	e192 of e192	[a] 2017 Royal College of Obstetricians and Gynaecologists
RCOG Guideline No. 20b	e177 of e177	[a] 2017 Royal College of Obstetricians and Gynaecologists

Appendix 1

Management of Breech Presentation

Women diagnosed with singleton breech presentation at 35 weeks or more in ANC (No upper limit of gestation)

Assess for contraindications

- If caesarean delivery is required for any other reason
- Placental abruption/Recurrent APH
- IUGR fetus with abnormal UAD
- Abnormal CTG
- Severe pre-eclampsia
- Unstable lie.

No Contraindications

Refer to attend breech clinic

- Prim at 36 weeks
- Parous 37 weeks
- Give information leaflet "Breech Baby"
- Advise to omit Clexane on the day

Do not book the CS

Breech Clinic

- Confirm if the baby is still breech
- If cephalic send home with clinic appointment appropriately
- Counselling for Breech Choices
  - ECV
  - Vaginal Breech Birth
  - Elective Caesarean Section

Agreed to have ECV

ECV –Pre Procedure

- Complete proforma and sign consent
- Ultrasound scan for
  - liquor, placenta, flexion of head, position ofspine and type of breech
  - EFW if not done last 3 weeks and UmbilicalArtery Dopplers if EFW <10th centile
- CTG for at least 20 min
- Administer Terbutaline 0.25mg subcutaneous, if prescribed by the Obstetrician
- **Inform the labour ward to ensure the theatre is free.**

Agreed for VBB

- Counselling about physiological breech birth
- Inform IOL is not routinely performed and SOL is preferable
- Continue antenatal care in Breech Clinic until SOL

Declined ECV

ECV - Procedure

- Woman should be in a comfortable position lying on her back with legs slightly flexed at the knee.
- Arms should be extended and lying alongside the woman in order to enhance abdominal relaxation
- Palpate the fetus to ascertain the position of the cephalic pole and the fetal back
- Try forward somersault first. Try backward somersault if version was difficult with forward somersault
- Ultrasound Scan to confirm position/FHR and CTG for 30 min after the procedure even if the ECV was unsuccessful.
- Kleihauer test and anti D for Rh negative women

Unsuccessful ECV

- Re-attempt at ECV
- Discuss VBB if SOL
- Inform CS will not be performed if spontaneous version to cephalic by the date of CS
- Discuss ECV under spinal
- Book ELCS @39/40+
- ANC review as required

Successful ECV

Advise to attend admissions if

- Reduced FM
- Abdominal Pain
- PV bleeding/PPROM
- Advise
- 5% reversal and can be re ECV if that happens

Book ANC appointment at term if no indication for earlier review

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caring supporting improving together

Appendix 2

Breech Clinic Proforma

Case Number: _____
Name: _____
Address: _____
Postcode: _____
DOB: _____
[OR USE ADDRESSOGRAPH]

Clinic Date: _____

EDC_____

Gestational Age: _____

Parity: _____ BMI at Booking: _____

Maternal Risk Factors _____

Maternal Rhesus Status _____ Drug Allergies _____

Counselling for External Cephalic Version (ECV) tick all

	Information leaflet read and understood
	Benefits of ECV if successful (reduces the need for elective caesarean section (ELCS), cord prolapse and unexpected vaginal breech delivery)
	Success rate of around 50%
	Frequently occurring problems – abdominal discomfort/ transient Fetal Heart Rate (FHR) changes
	Infrequently occurring problem (1/200) – need for emergency CS due to placental separation or FHR abnormalities
	Small chance of reversal (<5%), not a contraindication for reattempting ECV
	Concerns raised and queries answered
	Discussed alternatives – no intervention – 8% spontaneous version vaginal breech delivery(VBD), EL C/S, ECV under anaesthesia at EL C/S

Happy to Proceed with ECV

_____

Signature

Date ----------

-

Not Happy to Proceed with ECV

- Reason(s)

_____

Counselling and plan – if not happy to proceed with ECV or unsuccessful ECV (tick as appropriate)

	Attempt ECV next clinic – **date:**
	Attempt ECV under regional anaesthesia at EL C/S – **date:**
	Booking for EL C/S only – **date:** **Risks and benefits of CS discussed/Information leaflet provided**
	Happy for VBD if in advanced labour before ELCS as it may be safer Yes No
	Vaginal breech delivery (VBD)if appropriate Risks and benefits discussed • VBD has higher perinatal mortality and early neonatal morbidity than ELCS There is a possibility of difficulty in delivering head and needing Forceps to deliver head at VBD. This is less likely if delivered in upright position and delay the pushing until breech is visible at perineum. Induction of labour is not offered and the labour will be monitored for adequate progress. Inadequate progress or abnormal FHR in labour will require emergency CS. • VBD has lower immediate risks with quicker recovery for mother than ELCS • No evidence to suggest that long-term health of babies presenting breech is influenced by mode of delivery Plan

Name (counselled by)	Designation	Signature	Date
_____	_____	_____	_____
_____	_____	_____	_____

Pre-Procedure (circle as appropriate)

- Abdominal palpation
  - Lie — Longitudinal / Transverse / Oblique
  - Presentation — Breech / Cephalic
  - Position — Anterior / Posterior / L/lateral / R/lateral
  - Engagement — Yes / No
- Ultrasound Scan
  - Type of breech — Complete (Flexed) / Frank (Extended) / Footling
  - Fetal head — Flexed / Extended
  - Position of foetal spine — Anterior / Posterior / Left Lateral / Right Lateral
  - Placenta position/grade — Anterior 0/1/2/3 / Posterior 0/1/2/3 / Fundal 0/1/2/3
  - AFI — >10cm / <10cm
  - EFW and centile _____ UAD if < 10th centile _____
- Terbutaline 0.25 mg SC administered Yes / No
- Cardiotocograph — Normal / Suspicious / Abnormal

Procedure (circle as appropriate)

- Forward somersault — Once / Twice
- Backward somersault — Once / Twice
- FHR normal throughout — Yes / No

Success of ECV Yes No

- Reason(s) for non-success _____

Post-Procedure (circle as appropriate)

- Cardiotocograph Normal / Suspicious / Abnormal
  - Abnormal – action _____
- Blood for Kleihauer test sent (if indicated) Yes / No
- Anti-D prescribed and administered (if indicated) Yes / No

Discharge – if successful (tick all)

	Appointment for ANC at term – **date:**

Counselling on discharge (tick all)

	Attend Admissions if you notice: Abdominal pain / Decreased movement of baby / Bleeding per vagina / Rupture of membranes

Name	Designation	Signature	Date
_____	_____	_____	_____
_____	_____	_____	_____

Appendix 3

Unplanned/Undiagnosed Breech in Labour

Name
DOB
Hosp No

Parity 0 1 2 3 >3

Stage of Labour
Early Labour/ Active Labour/ Advanced Labour (=/>8cm)

Evaluation of Risk

	Minimal Risk	Moderate Risk	Higher Risk
Type of Breech	Frank/extended	Complete/flexed	Footling/other
Estimated Metal weight	2500g - 3800g	>3800g 2000g - 2500g	<2000g <10th centile
Fetal neck	Flexed	Extended	Hyperextended
Risk factors (Maternal/Fetal)	Low Risk		
Availability of skilled/experienced staff	Skilled and experienced staff available	Trained but experienced staff available	No trained staff available
Fetal Conditions (CTG)	Reassuring	Suspicious	Pathalogical
Progress in Labour	Fast, >6cm on presentation	Normal, 3-6cm on presentation	Slow

Counselling

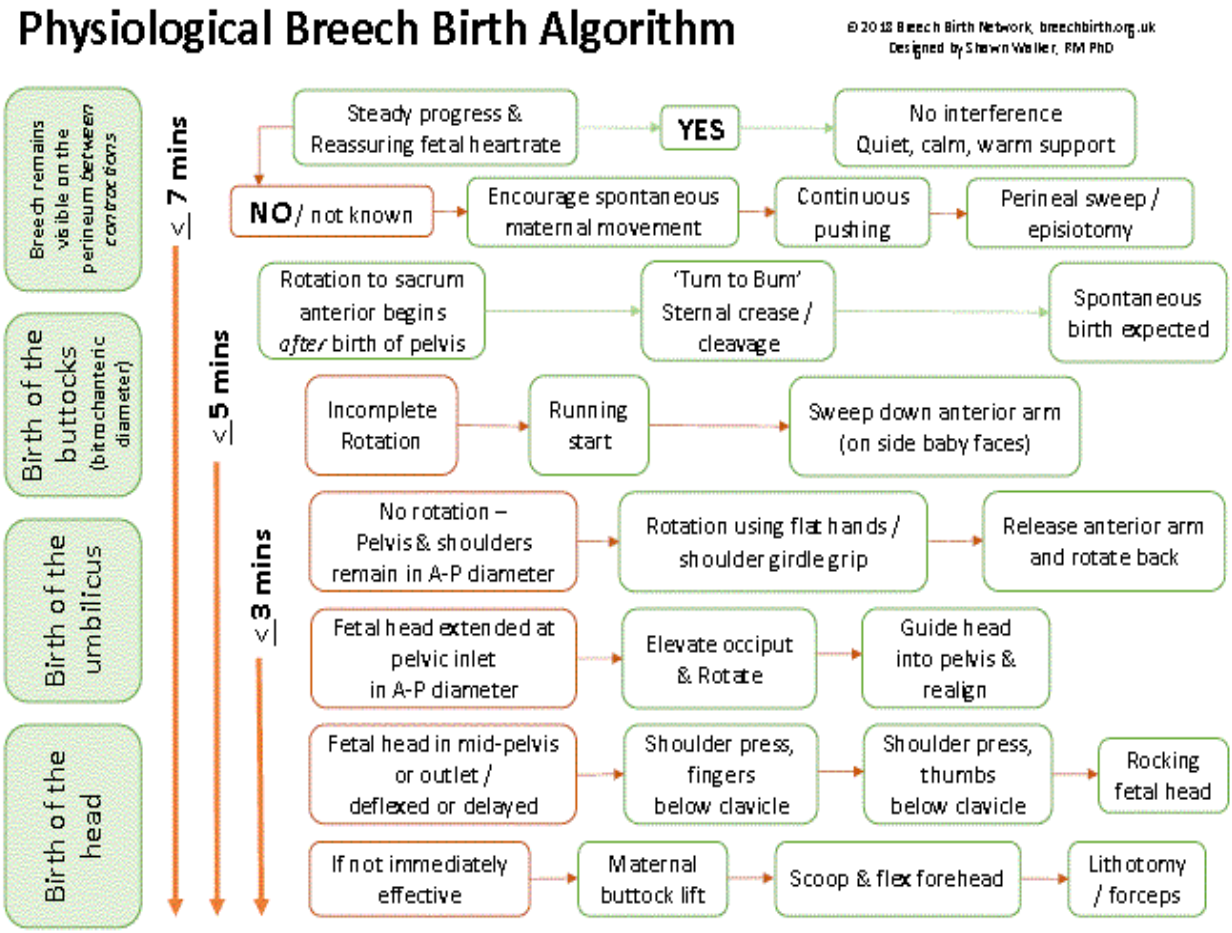
- There is no evidence to Indicate that Caesarean section improves outcomes for the babies presenting in breech when diagnosed first time in labour
- Compared to planned caesarean section, associated complications are increased when the caesarean section is performed in labour, especially in advanced labour
- Vaginal Breech Birth (VBB) is associated with increased risk of low Apgar scores and serious short term complications with no increased risk of long-term morbidity in the baby
- Assistance may be required to deliver the arms or the after coming head but this could be minimised by delivering in “All Four” or “Upright” position

Final Decision

VBB Emergency caesarean section

Name (mother) Signature Date

Name (doctor) Signature Date


Physiological Breech Birth Algorithm
© 2018 Breech Birth Network, breechbirth.org.uk
Designed by Shawn Walker, RM PhD
Breech remains visible on the perineum between contractions
Birth of the buttocks (bitrochanteric diameter)
Birth of the umbilicus
Birth of the head
≤ 7 mins
≤ 5 mins
≤ 3 mins
Steady progress & Reassuring fetal heartrate
YES
No interference Quiet, calm, warm support
NO / not known
Encourage spontaneous maternal movement
Continuous pushing
Perineal sweep / episiotomy
Rotation to sacrum anterior begins after birth of pelvis
'Turn to Bum' Sternal crease / cleavage
Spontaneous birth expected
Incomplete Rotation
Running start
Sweep down anterior arm (on side baby faces)
No rotation – Pelvis & shoulders remain in A-P diameter
Rotation using flat hands / shoulder girdle grip
Release anterior arm and rotate back
Fetal head extended at pelvic inlet in A-P diameter
Elevate occiput & Rotate
Guide head into pelvis & realign
Fetal head in mid-pelvis or outlet / deflexed or delayed
Shoulder press, fingers below clavicle
Shoulder press, thumbs below clavicle
Rocking fetal head
If not immediately effective
Maternal buttock lift
Scoop & flex forehead
Lithotomy / forceps